APPRAISAL

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Editor and Publisher: Dr R.T. Allen
20 Ulverscroft Road, Loughborough, LE11 3PU, England
Tel and answer-phone: 01509 215438; *E-mail:* appraisal@rtallen.clara.co.uk

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This issue's contributors:

Dr Norman Sheppard, FRS, is Professor Emeritus of Chemistry at the University of East Anglia, Norwich. Having studied at St Catherine's College and taught at Trinity College, Cambridge, he took up the chair at the newly founded UEA in 1964. A physical chemist, he speciality was spectroscopy, in particular its use in the study of the molecular structures of complexes attached to surfaces.

The Rev'd Julian Ward is Dean of Studies at Regents College, Nantwich. His article is part of the thesis for his M.Phil. on Polanyi and Kant awarded by the University of Manchester.

Dr Paul Dean is head of English at Portsmouth Grammar School. His article on Polanyi and Leavis appeared in *Appraisal* Vol. 2 No. 1.

Mr Chris Goodman has recently submitted his thesis on Polanyi for a Ph.D. at the University of Sheffield. His article is Chapter 5 of the thesis, and will be discussed at this year's Appraisal/Polanyi Conference in Guildford.

Dr Harold Turner, on his retirement to New Zealand, established there a vigorous branch of the Gospel and Culture Trust and its newsletter, *DeepSight*, from organising which he has recently retired.

EDITORIAL

No, *Appraisal* has not gone postmodern. Nor are we simply reprinting on the cover what was said once to be included on a Cambridge Moral Sciences tripos paper: 'Question 3: Is this a question?' That apparently asked for a discussion of the logical complexities of self-reference and especially vacuous self-reference. But, so the story continued, one brave soul simply wrote, 'Yes, if this is an answer', and was awarded a first.

We are not awarding anything but we are asking for suggestions for photographs or other illustrations for the front cover relevant in some way to the themes and types of article we publish, or to particular articles, such as the neo-lithic Thinker in the last issue. So please, if you have or come across anything that we could use, please send it in.

This issue contains the final three papers from last year's Conference at Sheffield plus one, by Chris Goodman, to be discussed at this year's next month at Guildford.

Professor Sheppard presents in a systematic fashion the principal elements of Polanyi's philosophy of science and finds that it is the one that fits best with his own first-hand experience of science.

Julian Ward, having set out what he regards as the proper interpreation of of Kant's transcendental idealism and empirical realism, suggests that Polanyi, with Piaget and Lorenz, can cope with the development, in the race and in the individual, of cognitive frameworks. (It has seemed to me that Kant is all 'assimilation' of experience to a set of fixed categories without any 'adaptation' of them to experience, and that the latter is required by any realism.) Polanyi's account of tacit integration also adds depth in several respects to Kant's epistemology. It also provides a justification of claims to know a diversified, empirical and mind-independent reality. (But is 'justification' Polanyian? It is our *confidence* in our everyday and scientific knowledge which comes first.) It also resolves the tension between Kant's belief that genuine knowledge is explicit and his honest recognition that 'wit' and 'imagination' operate in ways that cannot be made explicit.

Paul Dean, asking what is it to *teach* literature, what kind of knowledge is the teacher conveying, and what kinds of meaning are being understood by the pupils, points to the problems of integration and fragmentation, and, via D.H. Lawrence, Macmurray and Wordsworth, to Polanyi on the fusion of incompatibles and heuristic self-discovery.

Chris Goodman takes up Polanyi's endeavour to pass beyond nihilism, traces more of its historical roots and seeks a third way, with Polanyi's help, between the objectivism of pre-modern conceptions of the world and the subjectivism, with nihilistic consequences, that has too often succeeded them.

Finally, Harold Turner returns to the influence that J. H. Oldham exerted on the circles and 'networks', as we would say today, and on William Temple and Michael Polanyi in particular. J.H. Oldham also figures prominently

THIRD ANNUAL APPRAISAL/POLANYI CONFERENCE

Friday 9th April (from 5 pm) and Saturday April 10th

UNIVERSITY OF SURREY, GUILDFORD

Prof. Percy Hammond (Southampton U.) 'Models of Reality'
Sue Watkinson (Thames Valley I.) 'Polanyi's concept of an interpretative framework as a basis for professional decision-making in education'
Dr Hans Popper (formerly of U. of Wales, Swansea) 'The interpretation of literary texts: an exercise in understanding'.
Dr R. Brownhill (Surrey) "The Contribution of Michael Polanyi to Qualitative Research'
Prof. K. Schwartz (UEA) 'Creativity and design'
Chris Goodman (Sheffield U.) 'Beyond Nihilism'
The Rev'd David Kettle (Cambridge) 'On the primacy of indwelling'.
James Lund

Full residential fee (incl. Friday dinner): Standard room £57, Ensuite £68; day rate £23 + £12 for Friday dinner
Copies of papers will sent in advance

Please contact the Editor by Monday March 15th

MICHAEL POLANYI AND THE PHILOSOPHY OF SCIENCE

The Viewpoint of a Practising Scientist

Norman Sheppard

1 Introduction

Before Michael Polanyi gave up his Chair in Physical Chemistry at the University of Manchester in 1948 in favour of his interests in social studies and philosophy, he was one of the world's leading physical chemists. He was a Fellow of the Royal Society and had already received several Honorary Degrees for his highly original researches into chemical reactivity [1]. He was of the category of chemists who could expect nomination for a Nobel Prize, an honour which his son John was later to receive. Of necessity therefore it was his experience as a scientist which underpinned much of his philosophy. This was clear in his Riddell Memorial Lectures published as *Science, Faith and Society* in 1946, a decade before the publication of his philosophical *magnum opus, Personal Knowledge*. When I first came across PK I did not find it easy to read because of a lack of general philosophical background. However, perseverance led to its usual reward and I concluded that within PK there was, for me, the best account of the scientific endeavour to be found anywhere, an opinion reinforced by my later reading of *Science, Faith and Society*. However, Polanyi did not give an account of his philosophy of science which was altogether separate from that of his more general philosophical concerns. This has led to a situation where his contributions in this area are poorly acknowledged. For example a large volume entitled *The Philosophy of Science*, published in 1991, and edited by Boyd, Gasper and Trout[2], gave no reference to Polanyi in the index of authors. A subsequent scrutiny of the titles on my shelves concerned with this subject showed that only about half of them referred to Polanyi's work, and then sometimes with a single reference to PK. It therefore seemed worthwhile to provide a brief account of Polanyi's salient contributions to the philosophy of science and to discuss these in relation to the views of two other well known figures in this field, Popper and Kuhn. For those who are less familiar with these aspects of Polanyi's thought, his valedictory book with Harty Prosch entitled *Meaning*, and more recent accounts of his ideas, Polanyi by Richard Allen [3], and *Everyman Revived* by Drusilla Scott [4], provide introductions that some may find easier to read than the very detailed treatment given in PK.

2 Polanyi and science

2.1 Judgement and Imagination: Personal Contributions with Universal Intent

In PK Polanyi consistently emphasises personal judgement and the personal use of imagination as central to scientific advances. Of course logic and rationality are also seen as of great importance, both in formulating enquiries and in evaluating the conclusions, but these are considered to be subsidiary to the achievement of conceptual advances through the use of judgement and imagination. As is normally the case with Polanyi, the use of the word 'personal' in this context is not to be interpreted in the sense of subjective, for such contributions are offered to the world-wide community of scientists for criticism and evaluation i.e. these personal contributions are to be made with 'universal intent'. It is perhaps the lack of an appreciation of Polanyi's restricted use of the word 'personal', relevant even to the title of his major work, that has led to some superficial misunderstandings of his position. Polanyi does not intend to contradict the widely-held view that a special feature of science is its capability of producing, perhaps uniquely, what others describe as objective or, perhaps better (see later discussion), reliable knowledge [5]. Research at the borders of science is an uncertain but purposeful activity, when different ideas can be put forward by different groups in a context of the continuing production of new evidence. More reliable conclusions are reached later when most avenues for the production of evidence have been explored. In due course a wide consensus is usually reached within that section of the international scientific community that is interested in the particular problem, although that consensus is always open to revision in the light of new evidence. Nothing is final and beyond criticism in science.

2.2 Ethical and Fiduciary Aspects of Scientific Research

Polanyi emphasises that the pursuit of science is far from a value-free activity, as is sometimes suggested to be the case by non-scientists, for it involves strong ethical and fiduciary-type commitments. The agreed aim of science is to reach reliable understandings of the structures and operations of the natural world. If this is to he achieved, it is essential for the individual scientist, or group of scientists, to report their results freely, with truth and

accuracy, and in such detail that others have sufficient information to be able to reproduce the experimental or theoretical processes that led to the proposed conclusions. Furthermore, on the way to the publication of results in a (preferably widely-circulated) journal, the author of a paper has to submit it to independent review and criticism under editorial judication.

Fiduciary elements include the universal conviction among scientists that, where the available techniques make it feasible to explore a new field of research, the results will ultimately be found to be rationally understandable in relation to the already-explored scientific world. Therefore in general scientists are critical realists (or scientific realists, to use the alternative phrase preferred by some philosophers). Polanyi emphasises that it is this belief in the rationality of the natural world, allied to an expectation that this will continue to manifest itself in ways of potential importance, that strongly motivates the scientist. A search for such clues, and the development of them into theories of generality that can provide further insights, is the essence of the scientific endeavour. Polanyi is opposed to the views of the positivist philosophers who regard scientific theories as merely convenient summaries of acquired information. One of them, Mach [6], for example, at the end of the nineteenth century urged that the atoms and molecules imagined by the chemists, being unobservable, should be considered to be just convenient mental concepts rather than to point to a real existence; today their reality is manifest through direct observation. According to Polanyi new theories should be assumed to have predictive potential as well as explanatory value, i.e. to have the capacity of thrusting forward towards future understandings. In his eyes science is a disinterested activity *only* in the sense that honesty and open-mindedness are essential in the search for new knowledge. Otherwise, as the spouses of most scientists know to their cost when their partner's work is going well, it is a passionate endeavour which consumes much time and energy and which demands strong commitment. In general Polanyi was much concerned to reinstate the human dimension into the public conception of science.

2.3 The scientific community and the search for agreement

A fine scientist, according to Polanyi, is one who has the ability to choose good problems in relation to the knowledge and exploratory techniques that are available at the time; to be skilled in what Medawar has termed 'the art of the soluble' [7]. To a degree this depends on the natural flair of an individual but, as described in some detail by Polanyi, for success it also requires a thorough previous education and training. This is in order that the novice can learn the methods and techniques applicable to his or her field of research and, equally important, is taught how to relate to the scientific community as a whole. Science is a world-wide activity with expectations and general procedures common to all participants, whatever their country of origin. This is one reason why in the longer run no single individual, of whatever eminence, can dominate a scientific field to the detriment of the acceptance of new ideas. Indeed scientific ideas develop with such rapidity that it is widely appreciated that persons who make fine contributions in their youth can often find themselves in a conservative stance in relation to new concepts. For example John Dalton, who is credited with the general adoption of the atomic theory of matter, could not agree to Avogadro's later hypothesis, very relevant to his field, that equal pressures of gases corresponded to the presence of equal numbers of molecules. The reason was that this implied that all the common gaseous elements were diatomic in nature, a fact which Dalton considered to be most unlikely but which found clear explanation only some decades later after the monatomic rare gases were discovered.

2.4 Scientific training: mutual traditions and authority in the scientific community; conviviality

The principal feature of an undergraduate education in the sciences is that much effort has to be made in order to reach an in-depth understanding of the experimental and theoretical achievements of the chosen scientific field. Many laboratory, computational, and theoretical exercises are required in order to instil in the student a working knowledge of the science in question. Original investigations are usually only possible during the final undergraduate or the postgraduate years. This can cause frustration to those whose dedication to science is not of the strongest. The major effort required is necessary for the student to become strongly immersed in what Kuhn [8] later described as the prevailing scientific paradigm. Even then the guidance and supervision by a senior scientist is normally essential for the choice and successful conclusion of a research project. The senior colleague guides the student towards the most appropriate techniques, and for experimental work also often provides the equipment needed to further the investigation. Polanyi likens this phase to an apprenticeship of a young person to a master in the way practised in the past in art and today in architecture. In the process the young scientist acquires the necessary skills for subsequent independent research, becomes a knowledgeable recipient of the contents of the relevant literature, and learns how to make his or her own contributions to this. In other words, to use another of Polanyi's favourite terms, the requirement is to learn to become a connoisseur of the research field. In general this period provides an informal introduction to membership of the inter-

national scientific community and to its mutual traditions and authorities. It is an introduction to scientific 'conviviality', to use Polanyi's phrase; a term which implies mutual endeavour and trust within the community in question. Although well-established or traditional views can lead, as in non-scientific fields, to an initial reluctance to accept new ideas, the open and international nature of science ultimately enables even radical new ideas to take root once the supporting evidence is judged to be sound.

2.5 Problem solving the Polanyi way

The new researcher should ideally, in my experience, be introduced to Polanyi's recommendations for problem-solving, with its emphasis on the use of tacit as well as explicit knowledge accumulated during a person's lifetime of experiences. Where the problem is a difficult one that does not readily respond to further experimentation or to logical analysis, Polanyi's epistemological method involves repeated critical reviews of all the pieces of information deemed to focus on the problem, bearing in mind that some of these may prove to be false or misleading, while turning over in the mind various possible explanations. This is deliberately followed by a relaxed period during which the problem is little addressed in the hope that through the work of the subconscious a new idea will emerge, often suddenly, that allows the integration of earlier seemingly-contradictory clues into a possible whole. The proposed solution has then, of course, to be put to observational or experimental test.

2.6 Polanyi on reductionism

When a phenomenon depends on several variables it is a standard procedure in experimental and observational science to took for situations where only a few of these vary at a time. This essential procedure is termed reduction, and from it an overall understanding of the phenomenon is more readily and logically obtained. The similar-sounding term *reductionism* has a different connotation and normally refers to the relationship between different levels of science, e.g. the relationship of physics to chemistry, or of physics and chemistry to biology. Physics is the fundamental experimental science and the others can be understood with its help. The nature of chemical bonding can, for example, in principle be understood in terms of the dynamic electromagnetic interactions between the charged particles (the negative electrons and the positive atomic nuclei) associated with the atoms to be joined together. In one sense it can therefore be said, adopting a reductionist attitude, that chemistry is nothing but physics. Another point of view is that chemistry deals with much more complex many-particle systems than physics aspires to, and that it is this complexity that is responsible for those additional phenomena which we characterise as typically chemical. If the former 'nothing but' attitude is characterised as reductionist, the greater interest in chemical phenomena as a whole represents the *holistic* attitude.

Polanyi's view is that the overall holistic picture is the more interesting (the more meaningful) one. Biological phenomena involve much more complex systems again and emerge from the interplay of that complexity with the physical and chemical principles that underlie them. He finds very unsatisfactory the description of biology as nothing but physics and chemistry. But he also says that matters go beyond personal preference, for he claims that in principle it is not possible to do this for any system that requires an operational principle for its understanding. This applies not only to biological systems but also to machines and tools in general. Although this is a minority view, I am attracted to it and think that it may prevail. Of recent years there has been an increasing interest in the differences between between the physical sciences, the principles of which are assumed to operate unchanged wherever or whenever they are applied, and the sciences such as biology and geology, where a historical aspect is essential to overall understanding. I suspect that Polanyi's original but unconventional views on reductionism relate to that division, with engineering or technology also clearly falling into the 'historical' category.

2.7 An overview of Polanyian science

Polanyi's account sees science as a creative, passionate, humanistic and world-wide activity, thrusting forward towards new areas of understanding of the natural world. Many of the key steps in the process are, in his view, informal in nature and involve the applications of personal imagination and personal judgements; they are underpinned by logic and rationality wherever this is applicable. This is an account that I can strongly endorse from my own experience as a practising experimental scientist, although this is perhaps not too surprising as in many respects Polanyi's general philosophy is based on wider conceptual applications of the best practices within science. We have seen from Section 2.6 above that Polanyi has also put forward challenging ideas for future evaluation. Although it is not appropriate to pursue the matter here, an additional great advantage of the Polanyi perspective is that it shows that the sources of creativity in the sciences and in the arts are essentially the same; that they differ only in the fields chosen for endeavour.

3. The views of some selected philosophers in relation to those of Polanyi

3.1. Karl R. Popper

3.1.1 The personal relationship of

Popper with Polanyi

Polanyi's personal relationship to Popper was an interesting one. They had many things in common; both came from the same intellectual background in the Austro-Hungarian Empire at the beginning of this century, the one from Budapest and the other from Vienna; both opposed the positivist philosophers; both were passionately opposed to totalitarian societies and considered that personal freedom of choice is essential for the growth of science. However, they rarely referred to each other's work. Polanyi subtitled PK 'Towards a Post-Critical Philosophy'. He considered that overemphasis on doubt as a pathway to truth can lead to nihilism and totalitarianism, and that the retention of the humanist metaphysical concepts such as truth and justice is essential for the continuation of human freedom. In particular he had been horrified by the fact that such human considerations were ignored in the then Soviet Union, on the pretext that it was more important to further the. predictions of the (falsely) scientific and (falsely) objective doctrine of Marxism. It has been said that Popper and Polanyi fell out over this. Popper considered that on the contrary metaphysics is the source of totalitarianism and that this must he opposed by doubt i.e. by maintaining a spirit of criticism within an open society. [9]

Popper's *magnum opus, The Logic of Scientific Discovery* [10], was published in English at about. the same time as PK, but had some years earlier been published in German so that its content is independent of Polanyi's views. His general approach to science has been strongly commended by distinguished scientists such as Medawar, Eccles and Bondi [7, 11]

3.1.2 Induction and deduction; the hypothetico-deductive method; verification and falsification.

One of Popper's starting points concerned Francis Bacon's advice to scientists (natural philosophers as they were then called) to study nature by collecting related observations with a view to discerning patterns of occurrence that call for explanation. By this means theories could be generated by the process of induction. It was the contention of David Hume [12] that it was not logical to assume (as scientists do in the absence of evidence to the contrary) that a regular pattern of behaviour would continue without change. Popper strongly endorsed this view and further claimed that the manner in which one obtains ideas, from experimental data or otherwise, is not a solely logical process; it is often inscrutable. He proposed that the best procedure was to use one's imagination in order to select a hypothesis and then to logically deduce the consequencies, for scrutiny in comparison with existing and future experimental data, using critical analysis. This procedure is known as the hypothetico-deductive method. Hume's analysis also had the consequence that observations of further regularities could not in themselves constitute reliable verifications of a hypothesis. Popper, however, pointed out that new observations which *falsified* the theory would in principle lead to a logical step forward by requiring a new theory to be devised. His advice therefore was that scientists should strive to falsify their theories in order to make progress.

Of course scientists do use attempted falsifications to distinguish between alternative hypotheses that could account for the observations in question. However, once the stage has been reached that the preferred hypothesis is accepted as a tentative theory, Polanyi's views appear to differ from Popper's in two ways. First he claims that an apparent falsification can never be totally decisive; there is always the possibility of an erroneous experiment or observation, or of a wrong expectation derived from the theory. Therefore he says that in practice scientists do not, and should not, immediately reject a theory because of an apparent anomalous observation, provided that the theory is strongly supported on other grounds. They should simply proceed with further relevant experimentation. Once again it is seen as a question of judgement on the part of the individual scientist. Second he claims that scientists do not in practice explicitly attempt to falsify their theories for to have found one of promise is an achievement in itself which should be built upon.

Gregory [13] has distinguished between two aspects of induction, both said to have been appreciated by Bacon. The first looks for repeats of the same phenomenon in essentially the same circumstances; this seems to be the aspect of induction that Hume had in mind. The second looks for the same type of phenomenon in different but related circumstances. Scientists make much useful progress by attempting to confirm the tentative theory by the latter means. This is a valuable activity in itself as it explores new areas, increases useful knowledge, and brings to light the further understandings latent in theory. Success in these respects also enhances the value of the theory itself. I would add the comment that most theories have limited ranges of applicability and in such cases a continued exploration of a wide range of circumstances finally reveals their limitations. Popper's preferred goal of falsification. is thereby achieved, but at the end of a profitable sequence of explorations carried out with a very different attitude and for a different reason. After all, a theory which has not been frequently confirmed within its area of competence is hardly worth the effort of falsifying.

Popper asserts that even experimental observations are theory-laden in the sense that they attract our attention because they either fit in with what we already consider to be the ease, or because they are unexpected and uncomfortable, with the potentiality to cause us to

modify our views. This is true, but the relationship between theory and experiment in sciences is of the chicken and egg type. I consider that a better formulation would be to say that there is a component of theory in all observations. Popper's attitude to induction, while formally correct, should not be taken as downgrading the importance of experimental or observational investigations. Polanyi's expressed view in PK is to agree that induction is indeed a far from reliable process, but that it is nevertheless undeniably remains a valuable and principal source of information that has led to the formulation of many successful theories.

3.1.3 The hypothetico-deductive method and the provisional nature of scientific theories

There would, I believe, be wide agreement within the scientific community that Popper's hypothetico-deductive method is the correct formal method for assuring scientific progress. One formulates (guesses) an idea that could explain interesting experimental or observational data and then explores its scope and consequences by deductive processes. However, the idea (the equivalent of a premise in a mathematical exploration) is itself provisional and, although this procedure can lead to progress, it cannot be claimed to lead to certain knowledge. Popper emphasises that in this sense all scientific theories are provisional. This is so even although many individual items of scientific knowledge, such as the contention that a benzene molecule has six carbon and six hydrogen atoms, or that Newtonian mechanics provide an adequate theoretical underpinning of the game of billiards, seem likely to be secure from refutation.

3.1.4 Bold testable hypotheses—the way ahead?

Popper found particular inspiration from the way Einstein developed the theory of relativity and thereby showed that Newton's classical mechanics—at that time considered to be an indisputably true scientific theory—was not valid in the more general case. The theory was derived, as Polanyi also discusses in PK, partly as a result of a paradox to do with electromagnetic theory that Einstein found on imagining himself travelling at the speed of light, and partly as a result of a perceived asymmetry between the classical theoretical treatments of two branches of electricity and magnetism. The theory was arrived at through thought-experiments rather than through the more normal procedure of considering the results of laboratory experiments, a fact that possibly accounts for Popper's seemingly less regard for the experimental approach. Einstein's theory was based upon a bold hypothesis with testable implications and Popper strongly advocated that such an approach to science should be generally adopted. This certainly becomes a necessity when there is a major problem, possibly involving the overthrow of a very strongly entrenched theory, as in Einstein's case. But it would seem to be unnecessary and inappropriate in the context of the application of a well established theory to unexplored research areas. There the appropriate approach would seem to be to put forward hypotheses that constitute appropriate incremental changes to existing understandings. Popper's advocacy of the bold-hypothesis approach implies that he principally thought in terms of a heroic type of science, of which Einstein's development of the theory of relativity is a fine but atypical example, i.e. that he was really thinking in terms of what Kuhn later categorized as 'revolutionary' rather than 'normal' science. This distinction will be discussed below.

3.1.5 The differing views of Popper and Polanyi

There is no denying that the hypothetico-deductive approach advocated by Popper provides a formal philosophical framework for science that is strongly supported by a number of distinguished scientists. Polanyi's views differ principally in stressing additionally the importance of informal procedures within science. These are dependent on the personal judgements of individuals which in turn are guided by the tacit and explicit forms of their relevant knowledge. Polanyi re-emphasises the informal but continued importance of induction, based upon the mental analysis of experimental or observational data, in contrast to Popper's seemingly negative attitude to this. On falsification Polanyi stresses the importance of the intermediate exploratory steps as fruitfully extending our understanding of the natural world, even although the theory being evaluated will ultimately show its limitations. Some people seem motivated to obtain as much new knowledge as possible from a given amount of information, whereas others seem particularly concerned to avoid error in the analysis. Polanyi and Popper show these respective different emphases. This being taken into account, it seems not unreasonable to claim that they share a common goal despite the mutual differences expressed in their lifetimes.

3.2. Thomas S. Kuhn

3.2.1 Introduction

Thomas Kuhn is both an historian and philosopher of science whose seminal work *The Structure of Scientific Revolutions* 8 was published in 1962. A second edition appeared in 1970 and included a postscript that answered comments on, and criticisms of, the first edition. This second edition that is referred to below as SSR. After the analysis of the historical evidence relating to a number of critical stages in the progress of science, Kuhn made a distinction between what he termed 'normal' and 'revolutionary' science. Kuhn highly praises PK in SSR and his analysis clearly relates to a number of

aspects of science discussed at length by Polanyi. These include the role of the scientific community or its sub-communities as the repositories of accepted understandings and also as the consensual source of scientific agreements, the importance within the community of the agreed body of scientific knowledge at a particular time , and the difficulties that can arise between protagonists of traditional and innovative understandings.

3.2.2 'Normal' and 'revolutionary' science

Polanyi described how an essential aspect of the training of a student scientist is to become very familiar with the theories and experimental methods extant at that time, such as Newton's classical mechanics plus Clerk Maxwell's theory of electromagnetism (and the associated experimental techniques) which constituted the framework of physics at the end of the nineteenth century. These agreed features Kuhn described collectively as constituting the dominant paradigm of the time. Once well established, the theories and methods incorporated within such a paradigm can be used to efficiently extend understandings into many related fields. Kuhn terms this type of period as one of 'normal' science. He describes the individual steps in making such progress as the solving of 'puzzles' in relation to the original paradigm; I prefer to describe these steps as successful explorations using the paradigm. This is because the endeavour is not just an intellectual one, but is also of value in terms of the resulting new understandings.

However, there can come a time when experimental phenomena are encountered that are difficult to account for through appropriate additions to the existing paradigm. Originally, as Polanyi has described, these would tend to be put aside as anomalies that may find future explanation within the paradigm, or be noted for reinvestigation in hopes that the experimental procedures were erroneous. If, however, repeated efforts fail to account for the anomaly, or a related set of such anomalies, then interests begin to focus on these. Different individuals begin to make suggestions that could account for the anomalies but require the modification of one or more features of the original paradigm. In Kuhnian terms a 'revolution' is in the offing which can become manifest if an alternative theory emerges that accounts for the anomalies and also shows promise of providing modified explanations of most of the phenomena successfully accounted for by the original paradigm. Once a field of science has become mature, e.g. physics after Newton, chemistry after Priestley, Lavoisier and Dalton, or biology after Darwin, the strong paradigms that ensue provide satisfactory explanations for very wide ranges of phenomena. The overthrow of a paradigm that possibly generations of scientists have used with confidence is no light matter, and many will hang on to the original in hopes that it can yet accommodate the anomaly. At this level a successful new theory requires a reconstruction of the field from new fundamentals. As a result it becomes increasingly difficult for the two opposed groups, the 'radicals' and the 'conservatives', to understand each other and no logical common ground can be found to choose between the alternatives. Kuhn says that it is as if the two sets of protagonists are talking to each other in different languages, or in related languages in which some of the same words are used with different meanings.

An alternative to the two-languages model for the controversy is to liken the situation to alternative mathematical developments based on different axioms. Again it would be very difficult for the one group to accept the views of the other if they disagree on the axioms. This type of model provides a good description of the 'revolution' from classical mechanics to relativity theory; for the former is based on Euclidian geometry whereas the latter makes use of Riemannian geometry. Specific physical differences in these cases are that in Newtonian mechanics mass is independent of velocity, and energy and mass are separately conserved, but under relativity theory mass becomes dependent on velocity (when the latter approaches the speed of light) and only energy/mass is conserved according to Einstein's famous equation $E=mc^2$.

Under these types of circumstances Kuhn describes the two theories as being incommensurable and that for further progress it becomes necessary for one of the sides to win over the scientific community by persuasion. This suggests the possibilities of the effects of personal influences, political manoeuvring etc., and has led to misunderstandings to be discussed below.

3.2.3 The transition period

As the new proposed paradigm has much work to do in order to show how it can alternatively explain the wide range of phenomena already accounted for by its predecessor, it can take a considerable period—even up to a generation—for it to become widely accepted. If all this is successfully achieved, the new more flexible paradigm finally takes over from its predecessor and is now used as the basis for further fruitful explorations. The transition from classical mechanics to quantum mechanics provides a good example of this process.

Classical mechanics had been unsuccessful, despite multiple efforts, in attempting to account for the distribution of energy in the electromagnetic spectrum as a function of temperature. Max Planck showed that this could be explained if it were assumed that energy is emitted in certain discrete packets rather than continuously. He became a worried man because he realised that, if such an assumption were to he generally applicable, much of classical Newtonian mechanics would have to be recast.

Such proved to be the case, but in return the more general quantum mechanics that ensued enabled an understanding to be reached of the physics of the microscopic world of atoms, molecules, electrons etc. (of which the electromagnetic spectrum was one manifestation) which was not possible before. The new theory also provided an explanation for the detailed electromagnetic spectra of individual atoms or molecules an area which thereby became a major field of productive research in this century with important applications in chemistry, biology and medicine as well as in physics itself.

The new paradigm also provided perspectives on, or (as it had to) understandings of, the phenomena previously satisfactorily accounted for by classical mechanics. In Popperian language the anomaly that caused the problem could be said to have led to the falsification of Newtonian mechanics. This use of the term 'falsification', however, needs qualification in the sense that the equations of classical mechanics reappeared as special cases of those of quantum mechanics when masses are sufficiently large, e.g. are of a magnitude encountered in the normal macroscopic world, and the appropriate small packets of energy (the quanta) are small enough to give an approximation to the classically assumed continuous distribution of energy. Newtonian mechanics remains an economical way of accounting for the behaviour of the macroscopic world even although it is not capable of describing the behaviour of microscopic world. If an engineer wishes to design a new aircraft, the computers, even today, are kept busy using Newtonian equations. If the aim is to design a new alloy for the aircraft, or an improved fuel, then the evaluation of these atomic or molecular properties requires the use of quantum mechanics. We saw above that Newtonian mechanics also re-emerges as a special case of relativity theory for problems concerned with the normal everyday world. Finally quantum mechanics and relativity were combined into a single theory by Dirac, and in the process led to an understanding of the theoretical basis of chemical bonding.

3.2.4 The differences between 'normal' and 'revolutionary' science: Does relativism limit theory-choice in science?

Kuhn's 'revolutionary' science undoubtedly differs from his 'normal' science in the scale of the change that has to be made to the theoretical framework as a result of the 'revolution'. In SSR Kuhn pointed out, quite correctly, that the accounts of the development of science given in the normal student texts are highly simplified in their depiction of a seemingly smooth and inevitable progress of science. Such a picture is very much at variance with the detailed studies of 'revolutionary' type transitions by historians. In this context he argued at some length that progress across the boundary between one paradigm and its successor is of a nature different from that involved in changes within 'normal' science, where the adjustments fall within an existing paradigm. Nevertheless he concluded that rational scientific progress undoubtedly does occur across paradigm boundaries, as instanced above in the account of the replacement of classical mechanics by quantum mechanics and relativity theory, despite the much greater disjunctions that occur there. It should be noted however that Popper's hypothetico-deductive analysis and Polanyi's informal method of problem-solving appear to be applicable to both 'revolutionary' and 'normal' science. The use of the revolutionary analogy has caused some sociologists to conclude that such incommensurable theory-differences, because they cannot be settled on purely logical grounds, are susceptible to political types of persuasion. If in this respect science is no different from other activities then, they suggest, relativism has to be accorded to scientific theories, as is assumed to be the case in post-modern accounts of many other fields of thought. However, as elsewhere in science, these theory disputes are in fact settled in the Polanyian informal manner involving first personal, and later group, evaluations of the merits of the proposed new paradigm with respect to the overall scientific evidence. In addition to producing convincing explanations for the original anomalies, the new paradigm has to relate equally well to the wide field of experimental or observational phenomena satisfactorily accounted for by its predecessor—a very demanding requirement in terms of evidence from the natural world. In the postscript to the 1970 edition of SSR Kuhn expresses his unhappiness with the suggestion that, even in his 'revolutionary' cases, relativism limits ultimate rational choice between scientific theories. In *Meaning*, Polanyi and Prosch expressed pleasure at the extent to which Kuhn in SSR supported the views set out in PK. It seems likely that Polanyi would have been as equally opposed as Kuhn to the suggestion of relativism within scientific theory-choice. But he certainly would have agreed with the sociologists that science is very much a social activity that should be studied as such. A perceptive sociology of science is to be welcomed.

3.2.5 A further look at the revolutionary/normal science distinction.

Philosophers are well known to be unhappy about the informal nature of classifications and in this context a further look at the meaning of 'revolutionary' might shed light on the nature of the wide area of 'normal' science. For the revolutionary analogy to hold convincingly it is necessary for the earlier bug-standing paradigm to be given up when the flew one replaces it. This clearly applies, for example, to the conceptual changes such as were involved between the views associated with the names of Ptolemy and Copernicus' Coperni-

cus and Newton (the end of epicycles); Priestley and Lavoisier; 'God' and Darwin; Newton/Clerk Maxwell and Einstein; and Newton and Planck.

However, many very important advances in science involve high gain but no loss of an original paradigm. Examples include Dalton's and Mendelev's contributions to chemistry; Faraday's bringing together of electricity and magnetism; Mendel's contributions to genetics; Rutherford's discovery of the nucleus-based atom; the Crick and Watson elucidation of the structure of DNA, etc. All of these advances were received with enthusiasm and with little or no resistance and so it is seen that the description 'normal' encompasses much of the vital content of science. The word should not be equated with the meaning of second-rate or of minor importance Another point of interest with respect to 'normal' science relates to cross-correlations between the different sciences within the 'normal' science umbrella. As has been seen earlier in this paper, there is a hierarchy within the sciences in the sequence physics, chemistry and biology. Advances in experimental techniques in chemistry can lead to major conceptual advances in biology, or those in physics can do the same for chemistry and biology. For example, during this century the physical techniques of X-ray diffraction and spectroscopy have so advanced the efficiency of the determination of molecular structure that the scope of chemistry has been transformed; this in turn now makes major contributions to the study of the very large molecules of biology. As an example, the Crick and Watson elucidation of the structure of DNA was brought about by the application of the routine-in-physics technique of X-ray diffraction to the demanding problem of the structures of large key molecules in biology. Thus 'normal' work on an experimental technique in one branch of science can lead to a major advance in another.

4. Conclusions

Within their publications there appears to be disagreement between Polanyi and Popper over the importance or otherwise of the concept of falsifiability in relation to theory-advancement. However, it has been argued here that the principal differences between them relate to their respective emphases on informal and formal procedures in their progress towards similar goals. In this sense their two approaches are complementary. To coin a metaphor, perhaps it could be said that, in order to understand science in action, it is necessary to clothe Popper's (formal) skeleton with Polanyi's (informal) flesh-with-a-human-face.

Polanyi's emphasis on informal procedures has also reinstated induction, derived from experimental or observational data, as an important source of hypotheses for subsequent evaluation using Popper's hypothetico-deductive procedure. The importance of the experimental aspect of science has also been shown in the discussion of 'normal' science given earlier. An additional merit of experimentation is that thereby unexpected observations are frequently made which lead research into quite new directions. This is termed 'serendipity' and, as I have myself experienced, it provides a good example of how nature itself continuously intervenes to control the direction of scientific progress. Serendipity itself does not contradict the Popperian principle about the theoretical content of observations because, as Pasteur long ago pointed out, such discoveries come to minds prepared for something else. Serendipity also shows that, as Polanyi emphasises, successful science is very far from a solely formal and logical pursuit of knowledge. Most of the philosophers of science pay selective attention to the role of theory rather than experiment with in science. Polanyi, with his examples of experimental advances cited in PK, and Racking in his book *Representing and Intervening* [14] are exceptional in giving explicit consideration to the important role of experiment in advancing the frontiers of scientific knowledge. Others could profitably follow suit.

There is much common ground in the descriptions of science given by Polanyi and Kuhn, with the latter making the additional distinction between 'normal' and 'revolutionary' science. In this paper we have given particular attention to the former in order to make clear that 'normal' science as conceived by Kuhn also contributes in a very important, and not just routine, way to the advancement of science. Kuhn, in the second edition of SSR, has expressed concern that his classification of rival theories as incommensurable at a time of 'revolutionary' paradigm-change has led some social scientists to propose that relativism applies to scientific theories. I, too, have argued against this point of view and feel confident that Polanyi would also have been very much in agreement with Kuhn's concern.

The author's overall conclusion is that Polanyi's ideas in the area of the philosophy of science deserves to be very much centre-stage with those of Popper and Kuhn, and not in the symbolically-referred-to margin as is often the case.

School of Chemical Sciences,
University of East Anglia,
Norwich NR4 7TJ

Notes:

1. Wigner, E.P. and Hodgkin, R.A., (1977) *Biographical Memoirs of Fellows of the Royal Society*, Vol. 123, pp. 413-448.

Continued on p.132

REALISM OR IDEALISM?

A COMPARISON OF POLANYI'S EPISTEMOLOGY WITH THAT OF KANT

Julian W. Ward

1 Introduction

Is the human mind able to apprehend mind-independent reality? Or is it locked into only knowing in terms of its cognitive powers such that it cannot penetrate through the 'veil of appearance'? It is clear that Polanyi thought that it was possible for us to know the ontological structures of mind-independent physical reality and that scientific knowledge does progress towards a closer approximation to the forms of mind-independent nature. Polanyi would have opposed modern sociologists of knowledge who maintain that science is an essentially cultural construct such that scientific claims are determined by the frameworks and categories of human thought. In this view science is so conditioned by our human limitations that no scientist can justifiably claim that science is increasingly approximating to mind-independent truth. Polanyi would also have opposed postmodernists who deny the possibility of objective truth on the grounds that truth claims are inevitably made from within historically conditioned cultural frameworks and categories. For Polanyi the human mind is essentially embodied and being immersed in nature it is able to penetrate the mind-independent reality that it knows. We make cognitive claims with 'universal intent', namely, that other suitably qualified people should come to the same assertions, regardless of culture and history. We find that we have a responsibility to a truth that transcends us when we make assertions about what we claim to know.

But Polanyi did allow that all human knowledge claims could only occur from within the categories of human cognitive capacities and that all our knowledge is fallible and revisable. I have elsewhere outlined Polanyi's epistemology and his ontological affirmations that are based on it[1]. But we are left with the question whether Polanyi's critical realism can be adequately justified or whether, in fact, its epistemological framework must imply that human knowledge is essentially conditioned by its cognitive powers such that knowledge of mind-independent reality is not a possibility for the human mind. It was Kant's Copernican revolution that maintained that it is inevitable that all our awareness must necessarily be conditioned by our cognitive capacities. For him, knowledge of mind-independent reality is not a possibility for the human mind and hence it is not possible to construct a transcendent metaphysics. Only knowledge of the natural world is possible, for that will conform to our cognitive powers. Our only awareness that transcends our empirical knowledge is our sense of the moral 'ought', namely, the categorical imperative within.

Kant's epistemology has had a vast influence, both on subsequent philosophy and on developments since him in German theology. The romantic theology of Friedrich Schleiermacher (1768-1834) and the liberal theology of Albrecht Ritschl (1822-1889) were attempts to reconstruct Christian doctrine within the constraints of the Kantian veto on knowledge of the transcendent. In this century Karl Barth (1886-1968) has propounded his neo-orthodox theology of the Word that assumes Kant's epistemology and deprecates all attempts to find a point of contact for the Gospel in fallen man. In the last forty years there has been a whole industry in philosophy on Kant interpretation, with some two hundred books and articles on Kant being produced each year. Commentators have been divided over the validity of his arguments but there has been a consensus on their continuing importance for modern philosophical discussions[2]. In order to pursue our question whether Polanyi's epistemology does indeed allow one to maintain that human cognition does grasp mind-independent reality we shall compare Polanyi's epistemology with that of Kant and note carefully their respective frameworks in which they seek to undertake epistemological analysis. Readers are referred to the reference in footnote 1 for an exposition of Polanyi's epistemology and there will be no attempt to duplicate that material here. We can only give the briefest summary of Kant's epistemology here. Its framework is different from Polanyi's embodied approach. It seeks to explain how a discarnate rationality can apprehend an alien material realm.

2 Outline of Kant's epistemology

Introductory expositions of Kant's epistemology have been provided by Cassirer, Copleston, Hartnack, Kemp, Korner, Scruton and Werkmeister, amongst many others[3]. It has been ably defended by Allison[4] against the criticisms of such as Guyer[5]. Kant noted that previous philosophers had failed to arrive at a consensus in metaphysics and thought that there must be something wrong in trying to reason about ultimate realities. He believed

that Newton's physics had derived true and final knowledge about the forms of nature and he was thus concerned to overcome Hume's scepticism. Kant's starting point was to note that we know universal truths in mathematics and in science, such as the law of cause and effect. Being universal, they could not be the product of contingent empirical observations. They are synthetic truths known *a priori*. Thus they must arise from our cognitive powers that make knowledge possible. The claim that we know objects must mean that there is more involved in our ways of knowing than the mere conjunction of our sense awareness, as had been maintained by the British empiricists. There must therefore be innate powers in our minds that process the sense data to form the objective world of which we are aware. Such powers are the necessary conditions that make knowledge possible and Kant calls these conditions 'transcendental'.

For Kant the faculties that produce knowledge are the sensibility, the understanding and the reason. Knowledge arises from the interaction of the sensibility with the understanding as mediated by the imagination. The sensibility is our capacity to be affected by external reality and this produces our sensual awareness. This awareness is spatial and temporal. But space and time are not mind-independent realities (as with Newton) or relationships (as with Leibniz), but subjective powers of the sensibility by means of which we order our sensations spatially and temporally. The understanding, as a faculty of concepts, processes, or synthesises, to use Kant's own term, the spatio-temporal intuitions that come from the sensibility. The processing powers of the understanding include the categories and they integrate the sensual intuitions so as to grant us the awareness of an ordered objective world. The categories are the source of our awareness of the objectivity of substance and causation in nature, although only observation can tell us what causes what in physical reality. Other categories contribute to our expectation that nature will always be quantifiable and that sensations will always have a certain intensity. The categories are derived from the logical powers of our reason and Kant identified twelve of them from the various logical forms of different kinds of judgment. As applied to our sensual intuitions the categories are transformed ('schematised' in his terminology) by their integration with the subjective form of time within us so that they can process the spatio-temporal intuitions derived from our sensibility. Kant calls the schematized categories that determine the forms of nature that we know the 'principles of the pure understanding', for example, the permanence of substance, every event has a cause. Knowledge cannot arise from the categories alone but only from their interaction with empirical intuitions.

The reason within us has two aspects, pure reason and practical reason. Pure reason is our capacity for logical thought. It seeks to provide ultimate explanations, for it will always ask why. It is thus the source for our desire to systematise and explain our empirical knowledge, as happens in science. But reason inevitably uses the categories to ask ultimate metaphysical questions regarding reality and thus deduces the existence of the soul, the universe and God. But this is illegitimate for we have no intuitions of these supposed realities and an analysis of the arguments that have been used to assert them can expose fallacies in these arguments. We must remain agnostic regarding such metaphysical claims. Practical reason is our capacity for moral awareness. We are aware of the categorical imperative that calls upon us to do our duty, regardless of our feelings and the consequences. The fact of the categorical imperative is only explicable if there is a God, but that must be a presupposition of faith, which is to be totally divorced from knowledge as such.

We will now examine the epistemological framework that Kant constructed in order to explain the possibility of empirical knowledge. Inasmuch that the forms of our knowledge are necessarily conditioned by our cognitive powers it is a kind of idealism. But this should be sharply distinguished from the subjective idealism of Berkeley and the absolute idealism of Hegel. For Kant, the *existence* of mind-independent physical reality is not a product of our minds. As Kant seeks to specify the conditions necessary for knowledge he called his epistemology 'transcendental idealism'. But this has been interpreted in two quite different ways.

3 Interpretations of Kant's transcendental idealism

In the *Critique of Pure Reason* the key texts in which Kant explains his transcendental idealism are found in his discussion of the Fourth Paralogism[6]. Before Kant philosophers had supposed that external objects produced sensations or ideas (Locke) or impressions (Hume) in our minds and the mind constructs its awareness of objects out of such sensations. This has commonly been called the representative theory of knowledge but was characterised by Kant as transcendent realism (more often called by him 'transcendental realism') and empirical idealism. For Kant empirical idealism logically implies the possibility of Cartesian or Humean scepticism [7], but empirical idealism is to be rejected [8]. Newtonian science had shown the certainty of our knowledge of empirical reality. In contrast to the previous transcendent realism and its empirical idealism Kant proposes his transcendental idealism and its associated empirical realism. Kant says,

> By *transcendental idealism* I mean the doctrine that appearances [i.e., perceived objects] are to be regarded as being, one and all, representations

> only, not things in themselves, and that time and space are therefore only sensible forms of our intuition, not determinations given as existing by themselves, nor conditions of objects viewed as things in themselves. [9]

This implies empirical realism as our awareness of physical objects is immediate and not an inference from sensations.

> In order to arrive at the reality of outer objects I have just as little need to resort to inference as I have in regard to the reality of the object of my inner sense [i.e., the contents of my consciousness], that is, in regard to the reality of my thoughts. For in both cases alike the objects are nothing but representations, the immediate perception (consciousness) of which is at the same time a sufficient proof of their reality. [10]

The transcendent(al) ground of our empirical intuitions is completely unknowable, for we can only know it in terms of our cognitive powers, although we can *think* of it as 'things-in-themselves' and also label it as the 'transcendental object', in order to indicate the objectivity present in our experience. [11] There has been a major controversy in Kant interpretation as to how his transcendental idealism is to be understood and we will now discuss these two views.

4 The phenomenalist/psychological Interpretation

This takes Kant to be maintaining that there are two kinds of existence:

(a) Things-in-themselves (noumena) that exist independently of intuition. They do not exist in space and time and nothing can be known about them, except that they exist and are the causes of the appearances that we intuit.

(b) Things as known (phenomena), whose appearances we intuit. These are the empirical objects that are known to the understanding. In this interpretation space, time and intuited things are purely subjective.

Karl Ameriks notes that recent interpreters, who believe that Kant, in distinguishing appearances from things-in-themselves, did intend to refer to two different sets of objects, generally argue that there are serious inconsistencies in this 'two object' doctrine. [12] Those who hold this interpretation include Moltke S. Gram, T.E. Wilkerson, Ralph C.S. Walker and W.H. Walsh. Richard Aquila is the only recent interpreter to maintain that Kant was correct in being committed to two sets of objects. But this view commits Kant to a representative theory of knowledge, which he explicitly repudiates in rejecting empirical idealism and transcendental realism. [13] Kant maintains that he is a transcendental idealist and an empirical realist.

Justus Hartnack comments:

> In accordance with his empirical realism and transcendental idealism Kant rejects what he calls a transcendental dualism and therefore also a transcendental theory of perception. He rejects the supposition of a transcendent object that acts on a transcendent ego, so that what is given in space and time is its effect.[14]

Hartnack notes that nonetheless such a view is maintained by many interpreters such as Erich Adickes, Norman Kemp Smith and Thomas D. Weldon, but notes with approval that Graham Bird claims that they are mistaken in the latter's *Kant's Theory of Knowledge*. Hartnack continues,

> The difficulties connected with this problem are due to a transcendental realistic and transcendental dualistic point of view. For about the transcendent we cannot, and hence should not, speak. If as an empirical idealist one speaks only about the ideas and representations of consciousness, it would be quite without meaning to say that these ideas are external causes. If on the other hand one is a transcendental idealist and an empirical realist, the way of presenting the problem is different. External objects are neither transcendent nor empirical ideas (ideas in consciousness). The difficulties of a transcendental dualism lie, according to Kant, in the fact that it assumes a causal relationship between two such heterogeneous elements as transcendent objects and empirical ideas. For Kant this turns out to be relations between *Erscheinungen* [appearances].[16]

In support of this latter comment Hartnack quotes Kant:

> As long as we take inner and outer appearances [respectively, contents of consciousness and empirical phenomena] together as mere representations in experience, we find nothing absurd and strange in the association of two kinds of senses, [17]

namely, the awarenes of the contents of our minds and the awareness of empirical objects.

5 The logical/epistemological interpretation

This interpretation holds that the empirical object is the only actually existing thing, although its apprehended forms are the product of the categories, and the thing-in-itself is a logical limit for knowledge. Thus there is no question of the intuited thing being caused by the thing-in-itself, nor is there any question of the thing-in-itself being considered as a mystical, existing, unextended thing, because the concept of 'cause' and of 'thing' can only be applied within the realm of the empirical, the observable world that is known by the mind, and cannot be properly applied to the metaphysical status of reality. What does not appear in time and space and is not comprehended by means of the categories does not satisfy the necessary conditions for being known or thought or talked about. An alleged thing, which is not at any place nor at any point in time and of which, moreover, nothing can be predicated, cannot be meaningfully be said to exist as an entity.

The thing-in-itself as a concept is thus merely an expression for the boundaries of knowledge and hence of thought and meaningful speech. It underscores the fact that it is logically impossible to know any-

thing that is not in time and space. It represents the reality of empirical objects such as would be known to a perfect non-sensory intellectual intuition (as by God) and therefore their metaphysical status, which is not knowable to man. So when Kant speaks of the existence and reality of the outer world and of a causal connection between an external thing and our sensual intuitions, he is speaking of the intuited thing, the 'appearance', the empirical awareness that is comprehended by the understanding. When Kant speaks, more loosely, of the 'appearance' implying the thing-in-itself or the latter as 'the purely intelligible cause of appearances . . . the transcendental object' [18], he is speaking of our *concept* of the total reality of an empirical object, which can only be known by us in an empirical way. For Kant, space, time and empirical intuitions are objective and not merely subjective like sensations. The whole concept of a physical universe presupposes this. Thus it cannot be meaningfully said that before sentient creatures existed there must have been no time and space, because any statement about the universe presupposes time and space.

Ameriks notes,

> An important anticipation of [this] group of recent interpretations is to be found in Graham Bird's work. Bird proposed that in speaking philosophically of something as a thing in itself we are not speaking of a thing that is other than an appearance (as can happen when we speak empirically about an object as opposed to its mere image); we are simply considering the thing no longer from a merely empirical perspective but rather from an epistemic one, and in particular from one that is "transcendental" because it reveals certain *a priori* components. This suggests that things in themselves and appearances are ontologically identical, but also that the philosophical consideration of things in themselves is just a philosophical consideration of them as appearances, i.e., as items of knowledge. This approach to Kant could absolve him from the charge of hypostatizing a second world, but by itself it does not give a full explanation of the doctrine of the unknowability of things in themselves, or of the passages which seem to speak positively about distinguishing things in themselves from appearances.

So this kind of explanation needs expanding and Ameriks explains how this has been done in two different ways.

The first interpretation explains 'how the proper transcendental perspective on things differs from some *improper* (and hence empty) view of them as things in themselves' by rejecting 'any separate *idea* of a thing in itself'. [21] Those who take this view include Arthur Melnick, Ralf Meerbote, Jaakko Hintikka and Jonathan Bennett. Ameriks comments,

> All these views share the assumption that (even if things in themselves and appearances are not distinct objects) Kant could see no distinct and positive sense in *considering* objects *as* things in themselves. Moreover, it would seem that even if Kant did tie the unknowability of things in themselves (which he speaks of as but a *theoretical* unknowability for *us*) very closely to the doctrine of *a priori* conditions of experience, he still meant that claim [that things in themselves are in principle unknowable] to be something to be inferred from the doctrine [i.e., transcendental idealism], and not something that is simply identical in meaning to it.[22]

In order to distinguish this interpretation from the succeeding one, we can call it the 'single aspect interpretation'. No content can be attached to the concept of the thing in itself.

The second approach is that of

> developing some further and *proper* notion of what it would be to regard things as things in themselves - without multiplying entities or running afoul of Kant's limitations on our knowledge,

thus defending

> a distinct and intelligible sense in the idea of *considering* items *as* things in themselves rather than as appearances. [23]

This view maintains that,

> although for Kant there are not two objects involved, there are still two transcendental and *intelligible* aspects or points of view that are called for by his doctrine of things in themselves and appearances. [24]

We can *think* of things as empirical objects and we can *think* of things hypothetically as they are apart from the conditions of human cognition of them. Such a 'double aspect' interpretation can be found in work by H.E. Matthews, Henry E. Allison and Gerold Prauss. This seems to the present writer the correct interpretation.

6 *Evolutionary and developmental origins of synthetic 'a priori cognitive powers*

As has been made clear Kant begins his epistemological undertaking with the question, how far are *a priori* synthetic judgments possible? [25] For science, mathematics and metaphysics are based on non-analytic principles that are not derived from experience [26]. Cognitive claims in each of these three domains are only justifiable if the synthetic *a priori* principles at their foundation are justified. In the case of empirical knowledge and science the principles of the pure understanding, rooted in the categories, are fundamental to cognitive claims. These categories, exercised by the understanding, are themselves rooted in the logic of the pure theoretical reason. Empirical knowledge arises from the syntheses by the imagination and the understanding of the intuitions of the sensibility. The synthetic *a priori* nature of these syntheses shows that empirical knowledge is no mere analytic inference from sensations.

There is some correspondence here with Polanyi's doctrine of tacit knowledge, according to which the cognising subject integrates the subsidiary elements in his apprehension in order to grasp the focal object of knowledge. In this irre-

versible act of integration, as Polanyi repeatedly says, there is the crossing of a logical gap. This synthetic and creative step occurs in perception and education [27], acts of affirmation [28], discovery and invention [29], mathematics [30], problem solving generally [31], biological knowledge of organisms [32], persuasion in scientific conflicts [33] and the differences over standards of factuality in different world-views[34]. This recognition of the crossing of a 'logical gap' in the integrations involved in achieving all kinds of knowledge implies that such integrations are governed by creative synthetic principles. Polanyi does not try to identify these synthetic principles. His repeated affirmation that there is an unspecifiable tacit coefficient [35] in our integrations suggests that he regarded them as largely unidentifiable. In passing it may be noted that Kant did not think that it was possible to give fully explicit definitions of empirical and philosophical concepts. [36]

Polanyi does not consider the question whether such principles are *a priori* or *a posteriori*. Following Piaget he speaks of the infant developing 'a solid interpretative framework, each successive stage of which offers a possibility for increasingly elaborate logical operations' [37]. He also notes that babies initially see patches of light and colour and are not able at first to identify them with objects [38]. One would suspect that Polanyi did not think of our categorial framework as absolutely *a priori* in Kant's sense but rather as *a priori* in Piaget's sense of an epistemic framework that develops and is transformed in the early life of the child.

It seems to me that Piaget's understanding of the *a priori* as arising out of the subject's growth and growing interaction with the world would be congenial to Polanyi. The other factor that needs to be added is that the apriority of the child's developing categorial framework can be seen as a product of the evolutionary history of man as proposed by the renowned ethologist Konrad Lorenz [40]. Lorenz writes:

> One familiar with the innate modes of reaction of subhuman organisms can readily hypothesize that the *a priori* is due to hereditary differentiations of the central nervous system which have become characteristic of the species, producing hereditary dispositions to think in certain forms. One must realize that this conception of the *"a priori"* as an organ means the destruction of the concept: something that has evolved in evolutionary adaptation to the laws of the natural world has evolved *a posteriori* in a certain sense, even if in a way entirely different from that of abstraction or deduction from previous experience . . . . If the *a priori* apparatus of possible experience with all its forms of intuition and categories is not something immutably determined by factors extraneous to nature but rather something that mirrors the natural laws in contact with which it has evolved in the closest reciprocal interaction, then the boundaries of the transcendental begin to shift.[41]

I believe that Polanyi would be sympathetic to this evolutionary explanation of the origin of the *'a priori'*. But I do not think that Polanyi would be sympathetic to Lorenz's total naturalisation of epistemology or that his claim that the laws of pure reason are 'working hypotheses'[43], and certainly not with Lorenz's view that mathematical statements are tautologies.[44]

7 The indwelling of subsidiaries and objective knowledge

The concept of the indwelling of subsidiaries in our perception of external objects and irreducible comprehensive entities in the ontological hierachy provides a dimension of depth in our apprehension of the external world that is absent from Kant's epistemology[45]. The latter provides an explanation of the synthesis of our sensory awareness in terms of the integration of diverse elements by the pure forms of the sensibility and the categories, as it were, a two-dimensional construction of the appearances that arise from the interaction of the transcendental self with an unknowable reality. It is not too clear, despite Kant's exposition in the *Critique of Pure Reason* of the Transcendental Deduction of the Categories[46], why categories rooted in logical forms and schematized by the inner sense, namely, time, should produce the *objectivity* of objects as opposed to a merely coherent integrated picture. The objectivity present in experience is supposed to be self-evident in, for example, the consistency of causation that is apprehended in nature. But it is not clear to the present writer that such consistency is adequate to our awareness of the objectivity of the objects of our experience.

Polanyi's emphasis on indwelling introduces a new dimension into cognition theory that thereby enables not only a metaphysically realist objectivity to become possible (but not thereby proved—the impartation of meaning by the integrative power of external objects upon the subsidiaries of our perceptions is also needed for proof) but also allows the incorporation of our world-views, feelings, aesthetic responses, moral awareness, etc., in our descriptions of our modes of cognition. Thus Polanyi included the passions in scientific knowing and discovery. These modes of awareness are integral to all knowing and, in contrast, Kant's epistemology does not so integrate them. Moral awareness, ascription of purpose in nature and aesthetic awareness are treated by Kant as subjective forms of awareness distinct from our knowledge of empirical reality in the *Critique of Practical Reason* and the *Critique of Judgment*[47]. But Polanyi's fallibilism includes the view that such factors are intrinsic to our cognitive claims.

Both the objective empirical *and* mind-independent reality of perceptual objects, along with the

realities of the Polanyian hierarchy, are partly justified (a) by the homomorphic or analogous relation between the components of a comprehensive entity and the subsidiary components in our focal knowledge [48], and (b) by the comprehensive entity transforming the subsidiary particulars when they are used as clues to enable the individual to comprehend the existence and meaning of the comprehensive entity[49]. The transformation of subsidiaries in the cognition of a comprehensive entity, a transformation which constitutes the joint meaning of the particulars, means that more *meaning* is obtained through such knowledge than would be possible by the mere synthesis of sensory elements through the categories. In this way we can maintain the justification of knowledge of both empirical comprehensive entities and transempirical realities in our knowledge of other minds, our understanding of symbols and metaphors, and our apprehension of the meaning of works of art. But this also allows us to assert that we have knowledge of mind-independent entities and realities such that we have some knowledge of things-in-themselves, if it be true that we can apprehend objective purposes in nature and objective values in man's endeavours. Because of this we can cast doubt on Kant's transcendental idealism and we can seek to justify a metaphysical realism that describes an ontological hierarchy.

8 Integration of subsidiaries in cognitional and reflective syntheses

Polanyi and Kant can mutually illuminate each other's descriptions of these activities of the mind. Polanyi explicates the relations between subsidiaries and the focal object of knowledge, namely the functional, phenomenal, the semantic and the ontological relations[50]. These relations are aspects of an integration by the knowing person such that the subsidiaries are the means by which the focal object of knowledge is grasped. The cognising integration or synthesis incorporates the subsidiaries 'adverbially', i.e., sensations and intuitions are the means by which the object is known. Kant's doctrine of synthesis implies this but does not explicitly state it. Polanyi also makes clear that psychosomatic factors enter into the process of synthesis as subsidiaries and that it is the embodied person, not, as with Kant, an ineffable transcendental unity of apperception, that integrates the subsidiaries such that pre-existing categories, concepts and beliefs ('fiduciary frameworks') will contribute to the act of integration.

In the *Critique of Judgment* [52] Kant makes it clear that both determinant and reflective judgments are involved in our awareness of objects. Determinant judgments are those explicated in the *Critique of Pure Reason* and involve the application of concepts to intuitions. Reflective judgments seek the universal that is manifested in a particular. Determinant judgments involve the application of categories to linear time, but Kant also notes that 'objects of empirical cognition are determined in many ways other than by that formal time condition'[53]. Aesthetic and teleological awareness is present in many everyday judgments and some scientific ones. Polanyi has particularly emphasised the role of intellectual passions, a sense of harmony, beauty and fruitfulness, and a responsibility to the truth in judgments in science. Leaving aside the question of the cognitional objectivity of such aspects in our awareness, Polanyi would doubtless agree that both determinant and reflective judgments are present in our cognitional awareness.

Although Polanyi emphasises the unspecifiability of many subsidiaries involved in cognition, Kant can help us to understand the synthesizing activities within us, what we might call the 'integrators' of subsidiaries. According to the Transcendental Deduction in the first edition of the *Critique of Pure Reason* these are the synthesis of apprehension, the synthesis of the reproductive and productive imagination (the latter is called the figurative synthesis in the second edition [54]), and the categorical synthesis of the understanding [55]. These syntheses are best seen as three aspects of the one integrative cognitional act of the mind, which involves the imagination's schematization of the categories in applying them to the time-based contents of inner sense. Hence the imagination is active in cognition and this implies that an aesthetic component is present in cognitive acts.

But where aesthetic awareness is present there will be reflective judgments that accord a sense of the purposive to what is known. Kant describes the aesthetic judgment of reflection as follows:

> If the form of a given object in empirical intuition is so constituted that the *apprehension* of the manifold of the object in the imagination accords with the *presentation* of a concept of the understanding (regardless of which concept), then in mere reflection understanding and imagination mutually harmonise for the furtherance of their business, and the object is perceived as purposive for the judgment alone [56].

On this Makkreel comments,

> Although Kant speaks of a harmony of the understanding and the imagination, what is actually compared in the aesthetic imagination are two products of the imagination, i.e., a form apprehended by the imagination and schemata as temporal rules of the imagination.[57]

Furthermore, such synthesis may include reflective 'specification' which proceeds *'artistically* according to the universal but at the same time indeterminate principle of a purposive, systematic ordering of nature'[58]. Makkreel explains,

> The reflective principle of specification makes it a rule for our judgment that the various empirical causal laws should show a certain affinity when

their content is coordinated. We can discover this affinity through a process of classifying empirical causal sequences, but this itself presupposes that the category of causality can be specified. The reflective specification of the universal concept of causality is not in terms of temporally ordered objects of sense subsumed under it, but in terms of other concepts contained within it. Reflective judgment is concerned with the specification of universal concepts of the understanding *as* concepts, in order to make it possible to classify objects into a system of genera and species.[59]

So the aesthetic component in cognition has a heuristic power in associating similar patterns in various objects. Furthermore, biological knowledge inevitably invokes the ascription of teleology according to the second part of the *Critique of Judgment*. Likewise, Polanyi would affirm aesthetic and teleological factors in the integration of subsidiaries, with what he calls intuition [60] having the power to apprehend patterns within them. In these ways Kant can explicate factors involved in the integration of subsidiaries, but he does affirm, as would Polanyi, that concept application involves unspecifiable subsidiaries[61].

9 The doctrine of tacit knowing threatens Kant's epistemology

Ermanno Bencivenga has noticed how, for Kant, the activities of imagination and wit are largely subconscious, ineffable and not developed by merely following taught rules. The imagination is

> a blind but indispensable function of the soul, without which we should have no knowledge whatsoever, but of which we are scarcely ever conscious.[62]

Wit is defined by Kant as 'the power of thinking out the universal for the particular'[63]. It is a capacity that cannot be taught:

> A man who lacks wit has an *obtuse* head . . . . as far as understanding and reason are concerned, he can have a very good head; but we must not expect him to play the poet. So Clavius' schoolmaster wanted to apprentice him to a blacksmith because he could not compose verses; but when he was given a mathematics book, he became a great mathematician [64].

Kant maintains that judgment is

> the faculty of subsuming under rules [concepts]; that is, of distinguishing whether something does or does not stand under a given rule[65],

a reverse application of wit, 'the specific quality of so-called mother -wit'[66], and such judgment, as a 'natural talent' cannot be taught by simply imparting rules of procedure. Hence, Bencivenga says,

> The conclusion emerges that the mental faculties involved in the application of general rules to concrete cases work automatically and largely unconsciously, and cannot be taught. At most, one can hope to awaken them by example and practice [67].

This is totally in accord with what Polanyi has to say about apprenticeship in science and medicine and the impartation of all kinds of skills [68].

Bencivenga notes the tension that arises in Kant by, on the one hand, wanting to maintain that knowledge is explicit and nothing is known unless it is understood, and, on the other, allowing that inexplicit factors enter into our knowledge. In the *Groundwork of the Metaphysic of Morals* Kant says that 'wisdom . . . in itself consists more in doing and not doing than in knowing'[69]. So this opens to the view that skilled practitioners are not to be regarded as less than the philosopher because they do not and cannot aspire to his universal claims. Bencivenga comments,

> If this epoch-making reversal of values is appreciated, the deepest significance of Kant's obscure remarks about synthesis will finally emerge. The whole Aristotelian hierarchy that puts theories and theorisers on top and practices and practitioners on the bottom is being rejected when the emphasis of the enterprise of knowing is laid on the concrete, humble 'reading' that experience does, step by step, always within a definite (and limited) context, with no pretense of (or even direct interest in) any large-scale plan for achieving intellectual dominance of 'the world' in an absolute way. But because rational reflection is informed precisely by the large-scale point of view that is denied here, those concrete and humble practices are bound to elude it, and rational reflection is bound to proclaim in the end that they cannot be understood. They cannot be resolved into words—the material of thought: there is a physical, empirical residue to them beyond any words anybody could tell, and that residue can at best be seen at work, one time after another, without really knowing *why* and *how* it works. They involve something that does not fit any general intellectual picture in which all is explained and happens for a reason . . . . any *teaching* that might want to make a difference for its pupils should perhaps consist more in the awakening of dormant dispositions through example and training ... than in the linguistic codification, verbal communication, and mnemonic storage of bits of information Aristotle seems to suggest [70].

Polanyi would say a loud Amen to this! So Kant's epistemological project has exposed the tacit, inarticulable factors of imagination and wit involved in our knowing but recoils from accepting their significance.

> The obscure, mysterious 'presence' revealed by self-consciousness is entirely inconsistent with his cognitive ideal of transparency and understanding. On the other hand, attractive as it may be, that ideal is unattainable. In the end, what is mysterious does all the work, and what is transparent is also deceptive. The comprehension—and the 'knowledge'—that the philosopher would want is out of reach and, though the drive to it may not be entirely in vain, it is some other gift that makes it possible for us to stay afloat [71].

Bencivenga concludes that philosophical theories can ultimately be no more than a kind of story-telling and takes resort in Wittgenstein's therapeutic dissolv-

ing of philosophical problems [72]. But Polanyi philosophised in a truly Wittgensteinian way [73], for he sought to determine the 'logic' of numerous activities fundamental to our knowing and our living in a civilised society. For him such 'logics' did not dissolve philosophical problems but threw such light on them that man was able to find his true self in a real world of truth and value. For Polanyi much modern philosophy had lost its grip on a mind-independent reality. For him his epistemology restored to modern man the ability to know that he can grasp that external reality that so transcends his conscious thought.

10 A more plausible framework for epistemology

Kant constructed his epistemology within the Cartesian agenda which is characterised by the following:

(a) The self is regarded as an isolated entity apprehending an alien physical world and we have the problem of deciding how a mental substance can relate in knowledge to material objects.

(b) Knowledge, to be knowledge, must be true, justified belief that is free from all doubt.

(c) A satisfactory epistemology will make explicit all the powers necessary for knowledge and thus will be irrefutable. It seems logically inevitable that the product of this agenda should be either the empiricist scepticism of Hume or the rationalistic transcendental idealism of Kant. Either the world is unknowable or is constructed out of the powers of the human cognitive apparatus.

Polanyi argued that this Cartesian agenda does not correspond to human modes of knowing and fails to establish the justified and yet corrigible claims for knowledge in science and other forms of human endeavour. Thus his framework for describing human powers of knowing is based the converse of the above principles:

(a) The self is embodied in nature. It is intrinsically bound up with human traditions and culture that inevitably govern its modes of knowing. Perception of material entities is, as Bertrand Russell pointed out, both mental and physical, and we do not have to be committed to the Cartesian agenda with its irresolvable dualism [74]. As E. Pols says, 'Polanyi's contention that knowledge is personal in the sense that its creative or intuitive side is animated by bodily and passional vitality avoids the image of a disembodied intelligence, which is so often encouraged by the older tradition' [in epistemology stemming from Descartes][75].

(b) Knowledge is inevitably based on personal components such that it has good grounds but can never be totally free from all doubt. It is fallible and revisable. Knowledge arises within fiduciary frameworks that have been found to be meaningful but they cannot be given a final theoretical justification.

(c) A satisfactory epistemology cannot make explicit all the powers necessary for knowledge and so the epistemology itself cannot claim to be irrefutable. But it can claim to be the best available in the light of philosophical reflection on the evidence from cognitive psychology, the phenomenology of perception, the methods of science and the significance found in art, morals and religion.

This approach places Polanyi in the phenomenological tradition of Husserl, Merleau-Ponty, Heidegger, Gadamer and Ricoeur that emphasises the place of culture, tradition and hermeneutics in human knowing [76].

Polanyi held that reality has inexhaustible characteristics that are yet to be discovered and the ontological forms of external reality are not the product of our cognitive powers. Polanyi wrote,

> We can account for this capacity of ours to know more than we can tell if we believe in the presence of an external reality with which we can establish contact. This I do. I declare myself committed to the belief in an external reality gradually accessible to knowing, and I regard all true understanding as an intimation of such a reality which, being real, may yet reveal itself to our deepened understanding in an indefinite range of unexpected manifestations [77].

From the above we conclude that Polanyi's epistemology and ontology imply empirical realism, because through tacit knowing we can aspire to justifiable scientific knowledge. They also imply a transcendent and metaphysical realism, because the comprehensive entities exist as such apart from human cognition [78]. Polanyi comments:

> An empirical statement is true to the extent to which it reveals an aspect of reality, a reality largely hidden to us, and *existing therefore independently of our knowing it*. By trying to say something that is true about a reality believed to be existing independently of our knowing it, all assertions of fact necessarily carry *universal intent. Our claim to speak of reality serves thus as the external anchoring of our commitment in making a factual statement* [79].

Polanyi thought that there was a correspondence between our cognitive faculties and reality itself: 'An innate affinity for making contact with reality moves our thoughts—under the guidance of useful clues and plausible rules—to increase ever further our hold on reality'[80]. Kant specifically denied such a correspondence between the objects of knowledge and innate cognitive powers, a preformation doctrine that sees them 'implanted in us from the first moment of our existence, and so ordered by our Creator that their employment is in complete harmony with the laws of nature in accordance with which experience proceeds', on the grounds that :

(a) We can set no limit to the choice of supposed innate powers. 'On such a hypothesis we can set no limit to the assumption of predetermined dispositions to future judgments.'

(b) The 'decisive objection' that it would deny the universal necessity of the categories which, Kant thought, belonged to their very conception [81].

Kant thought that the law of causa-

tion would thereby cease to be an objective truth of the empirical world and be no more than a subjective psychological law for connecting empirical representations. Then there would be, in his view, no way of overcoming the Humean scepticism regarding scientific knowledge.

It is surprising that Kant should rule out the possibility of innate cognitive powers corresponding to the forms of mind-independent reality within less than a page of argumentation. Of the above passage in the *Critique of Pure Reason*, p. 175, B167f, Henry says,

Kant excludes preformation in the sense in which the medieval theological and philosophical tradition understood it, and actually misrepresents its implications. [82]

On reason (a) above, Henry comments that if Kant can find reasons why his own categories are limited in number, then it is perfectly feasible that there could be good reasons for limiting the number of implanted powers to those that correspond to the forms of nature.

On reason (b) above Henry objects,

> But Kant, least of all philosophers, can appropriately venture such an objection, for this difficulty . . . . attaches equally and especially to Kant's own view: the human mind thinks as it does because that is the way it is constituted . . . . Both the Critical and preformation views hold that the human mind thinks in an inherently constituted manner; if this leads to skepticism in the latter case, as Kant claims, it would no less have the same consequence for his own epistemology. The question of what assurance the categories may afford concerning objective necessity is peculiarly acute for Kant's philosophy, since it is antimetaphysical in spirit. If the categories are divinely implanted, they would not only be innate *a priori* principles of cognition, but created aptitudes significant for the actual constitution of the objectively real order of existence.

Henry continues:

> Kant's objections to the preformation theory are more rationalizations of his disavowal of it than anything else, since he not only dismisses it on grounds which, if fatal, are also fatal for his own view, but in a number of respects also misrepresents it. The preformation theory, he contends, denies that the categories are innate (*selbstgedacht*) and a priori first principles of cognition, and represents them instead as merely divinely implanted and maintained subjective aptitudes, hence as optional (*beliebigt*). If one asks what motivations might best account for such statements, we are probably to find them in a disposition to slant the preformation theory towards skepticism. For, as Clark emphasizes, 'what could be more truly innate than such implanted attitudes?' and, moreover, 'if we are so constituted as to be unable to think otherwise, there is little optional about it'.[83]

We may thus conclude that Polanyi has a more plausible epistemological framework than that of Kant and that thereby his affirmation of a mind-independent ontological hierarchy is also more plausible than Kant's veto of all metaphysical realism. Of course, it would be contrary to the Polanyian spirit to claim certitude for such a conclusion but it can be claimed as a reasonable belief. We shall thus conclude by summarising Marjorie Grene's criticism of the Kantian framework as this reinforces a preference for Polanyi's approach to epistemology over that of Kant.

11 Marjorie Grene's criticisms of Kant's epistemology

Majorie Grene, a professional philosopher, was Polanyi's personal assistant in the 1950's when he was writing *Personal Knowledge*. As she taught university courses on philosophy from Descartes to Kant, it is instructive to follow her criticism of Kant's epistemology. She believes that modern epistemological thought must begin with Kant's Analytic but we can no longer accept his radical dichotomy between appearances and things in themselves [84]. In *The Knower and the Known* she expounds Kant's transcendental deduction of the categories [85]. She then enlarges on what she regards as the deficiencies in Kant's epistemology. Firstly, Kant failed to identify and justify a complete set of the synthetic *a priori* categories, although he thought that he had achieved that [86]. They are those appropriate for the Newtonian scientist but not for the biologist, and, indeed, for the man in the street.

Secondly, Kant rightly recognised that knowing is an activity, but the subject of knowledge for him is the unknowable 'transcendental unity of apperception', rather than an identifiable agent, the human person. Grene comments:

> The Kantian agent, however, the I of transcendental unity, is an agent with no identity, no individuality, no destiny. It is *I* in my concrete historical situation who aspires to know. Apart from the problems that have puzzled *me*, the principles or maxims or ideas through which I interpret their solutions, 'mind's activity' is an empty phrase [87].

For Grene, man is essentially historical in the sense that the interpretative framework or set of categories by which he understands reality changes with time. The history of science shows how conceptual frameworks, or paradigms, change[88]. But Kant, wedded to the notion that Newtonian science was the ultimately true physics, had no awareness of this. So for Grene, 'In Kantian terms, synthetic *a prioris* change'[89].

Thirdly, Kant develops his epistemology within the Cartesian agenda, namely, the question as to how a purely spiritual subject can contact an alien physical world. Grene actually accuses Kant of being a 'Cartesian dualist' [90], but she is not ignorant of Kant's strictures on Cartesian empirical idealism in the Refutation of Idealism and the Fourth Paralogism. It is clear that she has the aforementioned Cartesian agenda in mind. 'Only a break with Cartesianism can enable us to see the concrete-

ness of life in nature and in mind, and so bring mind and nature together, not only within the closed circle of the Transcendental Deduction, but in historical reality'[91].

> What Cartesianism prevents, in the last analysis, is the mediation between mind and nature through the concept of *life* .... The Cartesian image of thinking mind over against dead nature makes impossible the understanding of man as historical, of human achievement, including the achievement of knowledge. Knowledge as an activity of persons, as something we strive to do, and succeed, or fail, in doing, is beyond the Cartesian's ken. And in the opposition of mind to merely inorganic nature, Kant was still a Cartesian thinker [92].

Fourthly, Kant neglected the knowledge of living creatures in the *Critique of Pure Reason* and expressed an ambiguous view of this in the *Critique of Judgment*, in which man, it is maintained, inevitably ascribes purpose (mechanical purpose, as such) to creatures and their organs, but cannot *know* objectively that such purposes exist. Grene comments,

> It has often been objected to Kant's analysis of knowledge, and rightly so, as I have argued, that he confined his perspective to Euclidean geometry and Newtonian physics. But no one so far as I know has objected to the range of Kant's argument in the Transcendental Analytic on the ground not simply that it is directed to Newtonian physics, but that it is directed in any sense to the knowledge of physical objects only . . . . . The encounter with plants and animals which is the first foundation of the biologist's knowledge is missing altogether from the primary range of experience Kant treats . . . the place of man *in* nature interested him a little if at all [94].

So Grene maintains that Kant's epistemology does not adequately express what is involved in knowing by the embodied living human person:

> Knowledge is an achievement of living beings, a mode of living: a theory of knowledge which tells us nothing about living things can tell us nothing really about knowledge itself. If knowing is something we, as discourse-endowed animals, do, to know about knowing is to know about a certain kind of living, and every theory of knowledge directed, as both the Cartesian and the Kantian are, to the knowledge of non-life thereby eliminates itself as its own object . . . For what we know as ourselves and encounter as other persons is plainly body-bound . . . . a living, historically embodied person [95].

Polanyi too maintained that any viable theory of knowledge must be applicable to itself [96]. Hence Grene asks, 'How can we know what man is if we restrict knowledge to non-living nature and so eliminate man himself, knowledge and all, from the object we are concerned to know?'[97] Such reflections lead Grene to reject Kant's radical dichotomy between knowable appearances and essentially unknowable things in themselves. She says,

> Man as historical person, rooted in man as living organism in a world of living organisms: only this double paradigm can give us a conceptual frame within which the activity of the knowing mind can be adequately understood. The knower is not simply the Transcendental Unity of Apperception, but myself, with my endowments, limitations, hopes, disappointments. It is a full, historical, not a mere logical 'I'. And this transformation given, the object of possible experience, the Transcendental Object = X, becomes itself clearly the *real* reality. It is things in themselves I *aim* at knowing, even though I can never know for sure that it is things in themselves I have, in any given solution of any given problem, come to know. I can never know reality except through my own categorization, my own interpretation. And I can never know it as a whole. Yet in every cognitive situation, it is I as an historical person, trained, well or ill, in this discipline, in this tradition, who am striving to know, and it is some aspect of things as they are which, 'X' though it be, is the goal of my endeavour [98].

12 The correlation between human knowing and human existence

Polanyi's critical realism is based on the fact, demonstrable from many examples, that the meaning of subsidiaries is given by the focal object of knowledge such that the object is known as an entity. Moreover, there is an analogous relationship between the subsidiary/focal relation and the components/comprehensive entity relation. What is real will manifest itself in unpredictable ways, and this is a prime mark that we are in contact with a reality not of our own making. However, a Kantian can say that he agrees with all this, for he also is an empirical realist. The synthesis of intuitions by the categories will result in the foregoing Polanyian claims.

But we have highlighted a number of factors that suggest that Polanyi's approach to epistemology is preferable to that of Kant. As we have seen, Polanyi maintains that our consideration of epistemology must be undertaken from the recognition that we are embodied human beings such that somatic and psychosomatic elements are contributing to our awareness of external reality, whereas Kant begins with a discarnate rationality. Moreover, it is our embodied condition, our living in cultures and traditions, and the aesthetic power of our imagination that ensure that numberless implicit factors, many of them indeterminate, are contributing to our apprehension of reality. In Polanyi's famous words, 'We . . . . know more than we can tell'[9]. Three important results follow from this and it is these points that allow us to say that Polanyi's epistemology shows that we actually do know mind-independent reality, even if in a partial, fallible and revisable way.

Firstly, we can meaningfully be said to indwell what we know, although this is a metaphor for an aspect of cognition that cannot perhaps be fully articulated. We are

part of nature and our cognition can penetrate it. Polanyi thought that the history of scientific progress was sufficient justification for this claim. It is instructive to note how we use motoric images. We 'search' for the truth and 'find' it. We 'construct' an argument and 'hold' a belief. We 'grasp' the meaning of an argument or truth claim. We 'enter' into an understanding of someone else's point of view. This approach becomes anti-Kantian when we note that Polanyi argues that, because of our indwelling of subsidiaries, aesthetic, teleological and moral factors are intrinsic to and essential for our *cognitive* claims. All this means that our knowledge is fallible, in contrast to Kant's supposition that true justified knowledge will lack any element of doubt. But Polanyi has shown that the above factors are essential to the scientific enterprise and become particularly explicit in our cognition in biology.

Secondly, a Polanyian approach to epistemology would envisage that our categorial frameworks have been the result of our evolutionary history, for only those creatures that could interact successfully with the environment could survive. Furthermore, a Piagetian explanation of the origin of such frameworks in early childhood development would cohere well with Polanyi's epistemology [100]. Being embodied is intrinsic to these frameworks. This runs counter to Kant's view that our categories derive from pure reason and thus we cannot know whether they conform to the forms of mind-independent reality. But Polanyi's epistemology is consistent here with the claim that we do have a partial knowledge of things-in-themselves. If this be so then we have a severe criticism of Kant's epistemology [101].

Thirdly, Polanyi's epistemology is self-reflexive. We are able to know an ontological hierarchy in an animal or a man because we embody in our being an ontological hierarchy [102]. And likewise our knowledge of the cognition of others conforms to our cognitive powers and also what we are. This conformity of what we know of others, namely, an ontological hierarchy, and what we are in ourselves, an embodied ontological hierarchy, is the foundation that allows us to say that we can know mind-independent reality. It is on this foundation that other arguments which have been outlined in this article are based. The circularity of this is evident but should not be seen to be an objection. In the first place, Polanyi denounces the idea of absolutely irrefutable knowledge, and, secondly, the claim that the human mind can know mind-independent reality is, in effect, so fundamental that it is unlikely to be demonstrably proven. It is the presupposition of science and our cognition in general. Hence such circularity would seem to be inevitable. But its justification arises from the vision it imparts of the capacities of the human mind, a vision that is confirmed in multifarious ways by its explanatory power and the innumerable examples from science and everyday life that Polanyi surveys in his writings. With this in view we can allow Polanyi to have the last word:

> Why do we entrust the life and guidance of our thoughts to our conceptions? Because we believe that their manifest rationality is due to their being in contact with domains of reality, of which they have grasped one aspect . . . . We grant authority over ourselves to the conceptions which we have accepted because we acknowledge them as intimations—derived from the contact we make through them with reality—of an indefinite sequence of novel further occasions . . . . The paradox of self-set standards is recast here into that of our subjective self-confidence in claiming to recognize an objective reality [103].

Regents College
Nantwich, Cheshire

Notes:

Material for this paper has been taken from my M.Phil. thesis entitled *A Critical Evaluation of the Epistemology of Michael Polanyi and Comparison with That of Kant*, University of Manchester, 1997.

1. J.W.Ward, 'Polanyi's ontological hierachy', *Appraisal*, Vol. 1, Supp. Issue, Pt II, pp.49-70, 1997.
2. See, for instance, Paolo Parrini, ed: *Kant and Contemporary Epistemology*, Dordrecht, The Netherlands, Kluwer, 1992.
3. Ernst Cassirer, *Kant's Life and Thought*, trans. Haden, New Haven, Conn., Yale U.P., 1981;
   F. Copleston, *A History of Philosophy*, Vol. 6, Pt 2, *Kant*, Garden City, NY, Image Books, Doubleday, 1964;
   J. Hartnack, *Kant's Theory of Knowledge*, trans. Hartshorne. London, Macmillan, 1968;
   J. Kemp, *The Philosophy of Kant*, Oxford, O.U.P., 1968;
   S. Korner, *Kant*, Harmondsworth, Penguin, 1955;
   R. Scruton, *Kant*, Oxford, O.U.P., 1982;
   W.H. Werkmeister, *Kant: The Architechtonic and Development of his Philosophy*, LaSalle, Il., Open Court, 1980.
   A helpful exposition of Kant's epistemology is to be found in K. Aschenbrenner, *A Companion to Kant's Critique of Pure Reason: The Transcendental Aesthetic and Analytic*, Lanham, Md, U.P. of America, 1983.
4. Henry E. Allison, *Kant's Transcendental Idealism: An Inter-*

pretation and Defense, New Haven, Conn., Yale U.P., 1983; *Idealism and Freedom: Essays on Kant's Theoretical and Practical Philosophy*, Cambridge, C.U.P., 1996.

5. P. Guyer, *Kant and the Claims of Knowledge*, Cambridge, C.U.P., 1987.
6. Norman Kemp Smith, *Immanuel Kant's Critique of Pure Reason*, London, Macmillan, 1929, rev. ed. 1933 (hereafter 'CPuR'), pp. 345-7, A369-72; pp. 349f, A375-6 ('A' = 1st ed. 1781, 'B' = 2nd ed. 1787).

   The First, Second and Third Paralogisms aim to expose the implicit logical errors in the traditional arguments for the soul being a substance, simple and personal. According to Kant these errors arise because of the illicit application of categories to that which transcends the empirical. The Fourth Paralogism deals with the scepticism inherent in the traditional way of conceiving the epistemological problem.
7. p. 347, A372.
8. p. 350, A376-7.
9. p. 345, A369.
10. p. 347, A371.
11. p. 441, A494, B522-3.
12. 'Recent work on Kant's theoretical philosophy', *American Philosophical Quarterly*, Vol. 19, pp.1-24, 1982, pp.1, 7f.
13. CPuR, p.347, A371-2.
14. Hartnack, p.111.
15. G. Bird, *Kant's Theory of Knowledge: An Outline of one Central Argument in the Critique of Pure Reason*, London, RKP, 1962, pp.36ff.
16. Hartnack, p.111.
17. CPuR, pp. 355f, A386; cf p. 358, A392-3.
18. p.441, A494, B522.
19. Bird, pp. 36ff.
20. Ameriks, p.1f.
21. p.2.
22. p.3, emphasis his.
23. p.2
24. p.4.
25. CPuR, p.55, B19.
26. pp.52-5, B14-8.
27. PK pp. 322f, 395.
28. pp.259-61.
29. pp.123, 177, 322f.
30. pp.125, 130, 189f, 260f.
31. pp.129, 143, 367.
32. pp.343-7.
33. pp.150f, 159.
34. pp. 240, 242, 319.
35. pp. 86, 95, 169, 203, 206, 250, 257, 259, 268, 336, 373, 389.
36. CPuR, pp. 586f, A727-9, B755-7.
37. PK, p. 395.
38. KB, p.170.
39. Cf Pk, p. 90.
40. 'Kant's doctrine of the *a priori* inth light of contemporary biology', in H.C. Plotkin, ed, *Learning Development and Culture: Essays in Evolutionary Epistemology*, NY, John Wiley, 1982, pp.121-44.
41. p. 122f.
42. p. 135.
43. p. 132.
44. p. 128. For more discussion of the evolutionary origins of our cognitive powers see, P. Munz, *Philosophical Darwinism: On the Origin of Knowledge by means of Natural Selection*, London, Routledge, 1993.
45. C.E. Gunton maintains that the combination of the logical relation between tacit awareness and focal knowledge and Polanyi's doctrine that we indwell our perceptions provides an anti-Humean justification that the human mind contacts mind-independent reality. ('The truth of Christology', in T.F. Torrance, ed., *Belief in Science and Christian Life*, Edinburgh, Handsel P., 1980, p. 98f.).

   We concur with what Gunton has written but would maintain that in order to affirm that Polanyi's epistemology leads to a non-Kantian reralism we have to show that the ontological hierarchy that it deduces is not mind-dependent. To do this we need not only the affirmation of the logical relation between tacit and focal knowledge and the correspondence between bodily indwelling and the indwelling of perceptions and, indeed, knowledge, but also the affirmation that knowledge of comprehensive entities transforms the subsidiaries by which they are known, such that increasing meaning or significance is apprehended as one moves up the hierarchy.
46. In the Transcendental Deducation Kant seeks to prove that the categories are essential for experience and thereby grant us the objectivity of what it is that we experience. There has been much discusssion amongst commentators as to whether his argument is successful and many doubt whether it is. A helpful exposition is found in F.C. White, *Kant's First Critique and the Transcendental Deduction*, Aldershot, Avebury, 1996.
47. Mark Johnson believes that Kant's epistemology fails to account properly for our embodied condition, for it is based on a 'fundamental Cartesian tension between the two ontologically different sides of our nature: the bodily and the rational' (*The Body in the Mind: The Bodily Basis of Meaning, Imagination, and Reason*, Chicago, Chicago U.P., 1987, p. xxvii).
48. Cf Andy Sanders, *Michael Polanyi's Post-critical Epistemology*, Amsterdam, Rodopi, 1988, pp. 150-8.
49. Cf Polanyi, SOM, pp. 29f.
50. See the reference in n.1.
51. 'I see a red box' is equivalent to 'I see an object redly and cubely'. Cf R.J. Hirst, *The Problems of Perception*, London, Allen and Unwin, 1959, Ch. 10.
52. Trans. J. Meredith, Oxford, Clarendon P., 1952 (hereafter 'CJ').
53. CJ, Intro., p. 19.
54. CPuR, p.164f, B151.
55. pp. 131-4, A98-103.
56. *First Introduction to the Critique of Judgment*, trans. J. Haden, Indianapolis, Bobbs-Merrill, 1965, p. 25.

57.R.A. Makkreel, *Imagination and Interpreation in Kant*, Chicago, Chicago U.P., 1990, p. 56.
58.*First Introduction*, p. 18.
59.Makkreel, p.57. More could be said on the symbolic application of rational ideas in aesthetic, but space forbids further discussion.
60.For Polanyi 'intuition' is the mind's capacity to recognise a coherent and meaningful pattern in the images produced by the imagination. it is quite different from what Kant meant by 'intuition', namely, that which is apprehended by the sensibility in spatio-temporal form.
61.CPuR, pp. 177f, A133-4, B192-3; 183, A141, B180-1; cf G.M. Ross and T. McWalter, eds., *Kant and his Influence*, Bristol, Thoemmes, 1990, pp.173, 189; S..L. de C. Fernandes, *Foundations of Objective Knowledge*, Dordrecht, Reidel, 1985, p. 151; KB, p. 105.
62.CPuR, p. 112, A78, B103.
63.*Anthropology from a Pragmatic Point of View*, ed. and trans. M. Gregor, The Hague, M.Nijhoff, 1974, p. 73.
64.p.75.
65.CPuR, p. 177, A132, B171.
66.p.177, A133, B172.
67.*Kant's Copernican Revolution*, Oxford, O.U.P., 1987, p. 202.
68. e.g. PK, pp. 53-5.
69.Ed. and trans. H.J. Paton, New York, Harper and Row, 1964, p. 73.
70.Bencivenga, p. 204.
71.p. 205. It should not be overlooked that Kant does say that we have no explanation why the categories should be related to the transcendental unity of apperception in the way they are, why we have the particular forms of judgment that we have, or whay space and time are the only forms of our intuition (CPuR, p. 161, B145).
72.Bencivenga, pp. 212f.
73.C.B. Daly, 'Polanyi and Wittgenstein', in Langford and Poteat, eds., *Intellect and Hope*, Durham, N.C., Duke U.P., 1968, p. 136-68.
74.*The Problems of Philosophy*, Oxford, O.U.P., 1912, p.21f.
75.'Polanyi and the problem of metaphysical knowledge', Langford and Poteat, p. 66.
76.KB, pp. 155, 221-3; M, p. 47.
77.KB, p. 133.
78.PK, p.104.
79.PK, p. 311, emphasis his.
80.PK, p. 403; cf 'Genius in science', *Encounter*, Vol. 38, pp.43-50, Jan. 1972, p.45.
81.CPuR, p. 174f, B167-8.
82.C.F.H. Henry, *God, Revelation and Authority*, Vol. 1, Hemel Hempstead, Word Books, 1981, p. 356.
83.p. 357, quoting G. H. Clark, *A Christian View of Men and Things*, Grand Rapids, Michigan, Eerdmans, 1952, p. 315.
84.*A Philosophical Testament*, Chicago, Open Court, 1995, pp. 31, 35.
85.*The Knower and the Known*, London, Faber, 1966, pp.132-40 (hereafter, 'KK').
86.p. 141.
87.p. 143.
88.Cf T. Kuhn, *The Structure of Scientific Revolutions*, Chicago, U. of Chicago P., 1962.
89.KK, p.145.
90.p. 143.
91.pp. 143f.
92.p. 147.
93.p. 148.
94.p. 149.
95.p. 151.
96.PK, p. 299.
97.KK, p. 152.
98.idem.
99.KB, p. 133.
100. Cf Dru Scott, *Everyman Revived*, Lewes, Book Guild, 1985, pp. 58f, 71f, 148f.
101. A thorough critique of Kant's epistemology would have to evaluate his arguments for the ideal;ity of space and time, which Kant saw as one of the pillars of his transcendental idealism. There has been much discussion on the validity of these arguments by commentators on Kant. For a recent discussion of them see L. Falkenstein, *Kant's Intutionism*, Toronto, U. of Toronto P., 1995.
102. See PK, pp. 377-80.
103. PK, p. 104.

POLANYI AND THE TEACHING OF LITERATURE

Paul Dean

1. Integration versus fragmentation

In the section of *Personal Knowledge* entitled 'The educated mind' (Part 2, 5.8), Polanyi describes education as 'latent knowledge, of which we are aware subsidiarily in our sense of intellectual power based on this knowledge', observing that 'the capacity continually to enrich and enliven its own conceptual framework by assimilating new experience is the mark of an intelligent personality'. The fact that advances in knowledge are made piecemeal, one generation seeing the importance of a given concept more clearly than its original formulators, is 'a token of objectivity' and of the concepts' 'being in contact with domains of reality'. One might gloss this by saying that our conceptual hypotheses provoke their own redefinition and refinement as we articulate them, reaching beyond us to our successors. Intellectual growth is telic, moving towards a goal never attained, ever more explicitly revealed. Polanyi crystallises the point in a telling image: 'the Pygmalion at work in us when we shape a conception is ever prepared to seek guidance from his own creation' (PK 103-10 4).

As a teacher of literature I find these suggestions more applicable to the secondary activity of criticism than to the primary act of creation. I would give less emphasis to objectivity as a source of literary 'knowledge' (a word whose meaning is questionable here). The argument that someone other than Einstein might have discovered the Theory of Relativity but that no-one else but Shakespeare or Schubert could have written *King Lear* or *Winterreise* is no less powerful for being familiar. Can one believe in a parallel, in the world of artistic creation, to the 'objective' 'external' world disclosed by progressive advances in scientific understanding? I also recognise, however, the force of the dictum of F. D. Maurice that 'All little children are Platonists, and it is their education which makes men Aristotelians'. The special dilemma of teachers of literature is that they are committed to integration, even when their approach is analytical, in a world characterised by fragmentation. Intellectual advance is assumed to depend upon specialisation; the thought that one's goal might be self-integration is alien to most of our pupils. The system conditions them to choose a 'career path', with the consequent academic options, absurdly early, before they really have an inkling of what sort of people they are—but they see a 'career' as external to personality, just another life-compartment.

'Our heuristic self-giving', says Polanyi, 'is invariably impassioned: its guide to reality is intellectual beauty' (PK 320). Polanyi reminds us that intellectual development is conditional upon the freedom to pursue open and self-justifying enquiry into problems, not seeking to 'prove' a predetermined conclusion but to discover more precisely the nature of the question. Like all teachers at all levels (I hope), I am dismayed by the extent to which purely mechanical and utilitarian considerations have come to dominate our educational system to the exclusion—indeed, to the downright hatred—of the aesthetic, the ideal, and the holistic. I take it as axiomatic that an educational system predicated on the fallacious analogy between schools (or universities) and business corporations, with a 'management structure' and the attendant bureaucratic dropsy, will be unable to provide any education worth the name. Businesses are uninterested in the personal, all their pretence of 'personal attention' to the customer being mere sales technique, whereas the personal possession of meaning, as something in which we dwell, is central to all education but in a special way to the education of our critical powers in literature. I cherish two Polanyian aphorisms by John Macmurray: 'Knowledge is always personal, always somebody's; but information is just anybody's'; and, 'The organic evolves; the personal is created, and created by persons' [1].

My major question, then—what is a teacher of literature doing when he or she is 'teaching'?—turns out to involve two further questions: what kind of 'knowledge' is the teacher conveying? and, what kinds of meaning are being understood by the pupils?

2. D. H. Lawrence on teaching

As a former teacher, D. H. Lawrence was aware of the formidable problems of meaning and knowledge in the classroom, and he dramatises them in *The Rainbow* with unforgettable power in the episodes (Chapter 13) in which Ursula becomes a teacher. Initially idealistic, determined to 'be so personal', to 'give, give, give all her great stores of wealth to the children' and 'make them so happy' [2], she discovers that she, no less than her pupils, must submit to impersonal mechanisms of instruction and subjugation if she is to survive: the discipline of the imposed will replaces the natural order of the shared heart:

> There it was, this class of fifty collective children . . . They were so many, that they were not children. They were a squadron. She could not speak as she would to a child, because they were not individual children, they were a collective, inhu-

man thing. [3]

Eventually, she thrashes a boy called Williams who has publicly defied her. This breaks the pupils' solidarity against her; 'they were no longer a pack, but each one separated into a silent, closed thing' [4]. The whole chapter brilliantly illustrates Macmurray's distinction between 'the discipline of authority' which 'aims at securing the repression of types of emotion that are considered improper' and which 'succeeds only by destroying the free spontaneity of emotional life', and 'the discipline which comes through the continuous effort to discover the real values in life for oneself' [5].

3. Lawrence on meaning

In Chapter 6 of *The Rainbow*, 'Anna Victrix', the newly-wed Will and Anna Brangwen are struggling to come to an understanding of each other's different needs. Will is mystic by temperament, attracted to religious images, and is poring over a picture of the Pieta, 'absorbed in looking, not thinking'. Anna cannot share his admiration:

> 'I do think they're loathsome', she cried.
>
> 'What?' he said, surprised, abstracted.
>
> 'Those bodies with slits in them, posing to be worshipped'.
>
> 'You see, it means the Sacraments, the Bread', he said, slowly.
>
> 'Does it!' she cried. 'Then it's worse. I don't want to see your chest slit, nor to eat your dead body, even if you offer it me. Can't you see it's horrible?'
>
> 'It isn't me, it's Christ'.
>
> 'What if it is, it's you! And it's horrible, you wallowing in your own dead body, and thinking of eating it in the Sacrament'.
>
> 'You've to take it for what it means'.
>
> 'It means your human body put up to be slit and killed and then worshipped—what else?
>
> They lapsed into silence. His soul grew angry and aloof.
>
> 'And I think that lamb in Church', she said, 'is the biggest joke in the parish—'
>
> She burst into a 'Pouf' of ridiculing laughter.
>
> 'It might be, to those that see nothing in it', he said. 'You know it's the symbol of Christ, of His innocence and sacrifice'.
>
> 'Whatever it means, it's a lamb!' she said. 'And I like lambs too much to treat them as if they had to mean something. As for the Christmas-tree flag—no—'
>
> And again she poufed with mockery.
>
> 'It's because you don't know anything', he said violently, harshly. 'Laugh at what you know, not at what you don't know'.
>
> 'What don't I know?'
>
> 'What things mean'.
>
> 'And what does it mean?'
>
> He was reluctant to answer her. He found it difficult.
>
> 'What does it mean?' she insisted.
>
> 'It means the triumph of the Resurrection'.
>
> She hesitated, baffled, a fear came upon her. What were these things? Something dark and powerful seemed to extend before her. Was it wonderful after all?
>
> But no—she refused it.
>
> 'Whatever it may pretend to mean, what it is is a silly absurd toy-lamb with a Christmas-tree flag lodged on its paw—and if it wants to mean anything else it must look different from that' [6].

Will can see through what a thing 'is' to what it 'means'; Anna cannot. To put the point in Polanyian terms, Will can use his focal awareness of the object to attend subsidiarily to its symbolic significance. Anna, on the other hand, cannot go beyond the world of mere objectivity; things, for her, just are intransigently themselves, and must become something else if they wish to mean the something else they become. With the intuition of genius, Lawrence has gone straight to issues that lay at the heart of the Reformation debate and which shaped the post-Reformation world we have inherited. It would not be too gross a distortion to suggest that they are the same issue identified above as a major stumbling-block to education, i.e. that of integration versus fragmentation.

This dichotomy is examined repeatedly in the novel, from historical, sociological, sexual and aesthetic perspectives. In Chapter 7, 'The Cathedral', Will and Anna visit Lincoln Minster. For Will the building is 'she', his entry of it a return to the womb, in which 'all was contained in oneness'[7] and the Gothic architecture, with its thrusting arches, symbolises an orgasmic consummation, a fusion of all meanings into an organic whole. For Anna, however, such a unity is illusory, artificial, a distortion of nature; she approves of the gargoyles, which bring her husband's idealism down to earth and restore individuality and materiality to the world. And Lawrence judges Will to be incomplete: 'He had failed to become really articulate, failed to find real experience. He had to continue in the old form. But in spirit, he was uncreated'[8]. His tacit knowledge remains tacit, so he can do nothing with it, or it with him. In this novel, Lawrence can only gesture towards a synthesis of the opposing viewpoints of Will and Anna with his closing image of the rainbow. Whereas Gothic 'always asserted the broken desire of mankind in its pointed arches, escaping the rolling, absolute beauty of the round earth'[9], the rainbow, by contrast, is hailed as 'the earth's new architecture' reconstructing the world 'in a living fabric of Truth'[10], a harmony, albeit transient, of its component parts. But Lawrence, who distrusted philosophical abstraction, was not satisfied with this final assertion of transcendence as against immanence. The result of his dissatisfaction was *Women in Love*, in which, if I had world enough and time, I should compare the discussion about meaning in art between Ursula Brangwen and the painter Loerke in chapter 29 ('Continental') with that between Will and Anna quoted above.

4. Teaching as creative art

Teaching is an art, a form of creativity, the expression, if not of the whole person of the teacher, at least of as much of it as seems needed at any one time; in its essence it is incommunicable by anyone except that individual teacher, and irrecoverable except in the memories of the teacher's pupils. The great religious teachers of history spoke in parable and image, metaphor and symbol (how much 'information' is imparted by Jesus, or by a Zen master?), and in our own time, such teachers as Wittgenstein or Leavis have left impressions upon their pupils which are indelible but defy reduction to a formula. All externals—syllabuses and public examinations, national criteria, appraisal or inspection, league table results —are completely irrelevant to the questions of whether a person can teach or not, and of whether or not the pupils have had an education or only a behaviourist training. Those utilitarian yardsticks are simply dead systems in which refuge is taken by the intellectually and emotionally stunted, who are desperate to persuade themselves that they are doing something real—i.e., for them, quantifiable. Leavis made this point once for all in his alignment of *Hard Times* and John Stuart Mill's *Autobiography*[11].

'Teaching' can involve no more, but also no less, than being oneself in public: which implies a continuous effort of self-understanding by the teacher, and (most taxing of all) requires a self to be (which is why the Utilitarians can't manage it). This may, perhaps must, involve a measure of agony; Wittgenstein remarks tellingly that 'the way people are educated nowadays tends to diminish their capacity for suffering' [12]. But if what one is teaching is not 'oneself' (for no teacher worth the name wishes to turn out clones of himself or herself), neither can one teach except out of one's sense of self.

Polanyi, I take it, would agree with this classic passage from Macmurray's *Reason and Emotion*: [13]

> Emotional education should be, therefore, a considered effort to teach children to feel for themselves; in the same sense that their intellectual training should be an effort to teach them to think for themselves. So long as we start with the assumption that we know how people ought to feel, and that it is our business to teach our pupils to feel in that way, the less successful we are the better. We have to realize how feeble and ineffective our own emotional life is, and to realize that for that very reason our notions of what is good feeling and what is not are also feeble and probably false. Then we shall perhaps begin to discover what we can do to develop in children the rich capacity for a spontaneous emotional life which has been so stunted in ourselves. One of the first results of such a fundamental change of attitude would be, I doubt not, that we should recognize that it is as ridiculous to put the emotional training of children in the hands of teachers whose emotional life is of a low grade or poorly developed, as it is to commit their intellectual education to teachers who are intellectually unintelligent and stupid [14].

Mill's phrase 'the very culture of the feelings', which he used to describe what he found in Wordsworth and had missed in his father's system [15], sums up what the teacher must have, and what he or she must strive for in teaching. 'Culture', with its connotations of growth and realised potential, is the crucial metaphor.

5. Knowledge as growth—and survival

It follows that literature, music and the visual arts, philosophy and history (all of which the English teacher expects to 'teach'—in and through the literature, and with proper respect for the professional expertise of colleagues in other disciplines) propose knowledge as a means of growth rather than as the acquisition of 'information'. Contrast Bertrand Russell's saying he loved mathematics because it didn't love him back (and he needed the rest) with Ezra Pound's aphorism 'A really good book reads us'. Think of Newman's classic lecture in *The Idea of a University* on 'Liberal Knowledge its own End', with its miniature hymn to intellectual beauty—

> Such knowledge is not a mere extrinsic or accidental knowledge, which is ours today and another's tomorrow, which may be got up from a book, and easily forgotten again, which we can command or communicate at our pleasure, which we can borrow for the occasion, carry about in our hand, and take into the market; it is an acquired illumination, it is a habit, a personal possession, and an inward endowment. And this is the reason why it is more correct, as well as more used, to speak of a university as a place of education than of instruction . . . [16]

—or consider the experience of Polanyi's compatriot, the great Hungarian poet George Faludy, related in his autobiography *My Happy Days in Hell*. Interned by the Communists in a forced labour camp on his return from America after the war, he was asked by his fellow prisoners to lead discussions on philosophy. One day, a member of this extraordinary symposium, Joska Borostobi, came to see Faludy:

> 'George', he said, 'I have decided not to take part in the conversations any more. Last night, when you were talking about the Platonic ideas, I suddenly realized that I had lost interest in intellectual matters. Don't blame me, blame circumstances . . . I think that in future I shall sleep more and think less. I shall live the life of the algae. At least until things improve,' he added uncertainly . . . Borostrobi stood quietly, obviously waiting for me to talk him out of his decision but I hardly noticed him. Was it true that he who would not talk about Plato had to die? Did reciting Keats's poems immunize one against bacilli?[17]

These are, perhaps, unanswerable questions. Two facts, however, are beyond dispute and you may make of them what you will: Borostrobi lived for exactly one week after withdrawing from the group, whereas Faludy survived, and is happily still alive and writing, at the age of eighty-seven. I remember this story whenever I read George Steiner announcing, yet again, that the ideals of liberal humanism have been disproved by the Holocaust.

6. Wordsworth on tacit knowledge

I have not wandered as far from Polanyi as might appear (and, after all, a Polanyian way to use Polanyi is to look with rather than at him), but by way of a return I will refer to Drusilla Scott's discussion in her book *Michael Polanyi* (1985). She makes some useful comparisons of Polanyi and Leavis (her book was not known to me, I regret to say, when I wrote my own piece on this topic for *Appraisal*[18]) and expresses doubts, which I share, about the chapters on aesthetics and religion in *Meaning*, while allowing the value of their 'point about the imaginative fusion of opposite or contradictory clues to give a special sort of truth' [19] different from the truths of science. Not that this idea was first thought of by Polanyi, or by I. A. Richards on whose reductive account of metaphor he leans over-heavily in those chapters; its originators were Wordsworth and Coleridge, and Drusilla Scott actually illustrates it by citing Wordsworth's *Prelude*, without adding that Wordsworth makes some very acute remarks on the matter himself in the Preface to the 1800 edition of *Lyrical Ballads*. Feeling that I had better give at least one classroom example, I will quote one of the poems in that collection, 'Strange fits of passion I have known'.

Strange fits of passion I have known,
And I will dare to tell,
But in the lover's ear alone,
What once to me befell.

When she I loved, was strong and gay
And like a rose in June,
I to her cottage bent my way.
Beneath the evening moon.

Upon the moon I fixed my eye
All over the wide lea;
My horse trudged on, and we drew nigh
Those paths so dear to me.

And now we reached the orchard plot,
And, as we climbed the hill,
Towards the roof of Lucy's cot
The moon descended still.

In one of those sweet dreams I slept,
Kind Nature's gentlest boon!
And, all the while, my eyes I kept
On the descending moon.

My horse moved on; hoof after hoof
He raised and never stopped:
When down behind the cottage roof
At once the planet dropped.

What fond and wayward thoughts will slide
Into a Lover's head—
'O mercy!' to myself I cried,
'If Lucy should be dead!' [20]

It was William Empson, I think, who said that the *Lyrical Ballads* were best understood as psychological case-notes, and here is a particularly splendid one. The narrator is attending focally to the moon and tacitly to what it symbolises, Lucy's transcendent (and unattainable?) beauty: the one guides him to the other, and they merge, in his trance-like state of mind, so that when the one suddenly disappears it seems that the other must have done so too, and he is jolted into focal awareness of the identification as the ghastly premonition strikes him (and line 5 suggests that the death has in fact occurred).

So much comment is a necessary minimum, but I mention the poem to illustrate another point. Wordsworth insists in the first stanza that only a lover will be able to understand the experience he is to relate, since only such a person will, as we might now say, bring the right mental template to bear. This was brought home to me years ago when I was discussing the poem with a group of A Level students. One boy limited his contribution to a single devastating sentence. He said, 'Of course, he's incorrect—the moon isn't a planet, it's a satellite'. Now here was a highly intelligent boy, who had made himself proof against understanding or sympathising with the poem. This is a striking instance of Polanyi's theories being embodied, not only in the poem but in the reaction of the person who misdirected his attention. It would have been equally absurd if anyone had said to Wordsworth, 'But it was just an optical illusion caused by the change of perspective as you moved forward'. Naturally he knew that (he makes use of a similar effect in the famous boat-stealing episode in *The Prelude*). And yet the fact that Wordsworth didn't know that the moon was a satellite (if indeed he didn't) is not irrelevant; indeed it adds to the effect. Wordsworth was fond of importing scientifc terminology into his poems, and he would have known that the word 'planet' comes from the Greek word for a wanderer; the planets, with their apparently independent movements, were so called to distinguish them from the fixed stars. He calls the moon a planet to draw attention to its power of motion; one might say that part of what the narrator realises is that Lucy is not forever going to be a fixed point of reference for him. But it was no use saying any of this to my pupil; to him Wordsworth was written off as an ignoramus.

7. Conclusion: the need to focus

Polanyi's and my concerns might have been paralleled from specialists in other fields; from the work of R. G. Collingwood in philosophy of history, of Ernst Gombrich, Richard Wollheim or Michael Bax-

endall in aesthetics, or of Liam Hudson in psychology, for instance. They share many emphases: on the importance of learning to look, to see what is in front of one; on the active character of intellectual enquiry, the framing of hypotheses, the putting of questions which will in turn refine the conceptions that gave rise to them; on the crucial role of a sense of structure, the repeated acts of integrating particulars, mental mapping, making connections.

The teacher of literature is someone who makes this possible for his or her pupils; who offers the chance of heuristic self-discovery in new and exciting ways. Jessie Chambers reports of Lawrence that 'there was never the least touch of the academic or scholastic in his approach. What he read was to be applied here and now; he seemed to consider all his philosophical reading from the angle of his own personal need'[21]. For some, this will merely be confirmation of Lawrence's egotism; for others, myself included, it testifies to his instinctive intelligence and to his deep artistic vocation, hearing the prompting of the Pygmalion at work within him.

Polanyi in *Meaning* tends to view all art, and intellectual systems such as theology, in terms of symbolism or myth; the articulation of meaning is an act performed from within the personality but externalised and impersonalised by the framing artifice of structure, whether of words, paint, clay, sound or other materials. Although I think he takes this too far, particularly in respect of religion, his emphasis has value. Literature is one such powerful structure; it calls out to us and to our pupils for understanding, and the effort to probe its meanings is a token, not of narcissism but of true freedom.

Portsmouth Grammar School

Notes:

1. *Reason and Emotion* (London, Faber, 1935, 2nd ed. 1962), pp. 150, 167.
2. *The Rainbow* (London, 1915: Penguin ed., 1968), p.367.
3. ibid. pp. 376-7.
4. ibid. p.399.
5. *Reason and Emotion*, p. 69.
6. *The Rainbow*, pp. 161-2.
7. ibid. p.202.
8. ibid. p.206.
9. ibid. p.237.
10. ibid. p. 496.
11. F.R. Leavis, ed., *Mill on Bentham and Coleridge* (London, Chatto, 1967), p.35.
12. *Culture and Value*, trans. Peter Winch, 1980, p. 71.
13. Fr Martin Moleski does not share this assumption: he feels that Polanyi would find reductive the view of adult emotional life expressed in this passage.
14. *Reason and Emotion*, 1935; 2nd ed., 1962, pp. 69-70.
15. *Autobiography*, ed. Jack Stillinger (Oxford, 1971), p. 89.
16. Everyman ed., p. 93.
17. *My Happy Days in Hell*, trans.K. Szasz, (London, Deutsch, 1962), p.400.
18. 'F.R. Leavis and Michael Polanyi on meaning', *Appraisal*, Vol. 2, No. 1, March 1998.
19. SPCK edition, 1995, p. 166.
20. The Oxford Authors *William Wordsworth*, ed. Stephen Gill, 1984, p.148.
21. *D. H. Lawrence: a Personal Record*, 1935; CUP edition, 1980, p. 113.

Continued from p. 114

2. Boyd, R., Gasper, P., and Trout, J.D., eds. (1991) *The Philosophy of Science*, The MIT Press, Cambridge, Mass., USA.
3. Allen, R., (1990) *Polanyi*, Claridge Press, London.
4. Scott, D., (1985), *Everyman Revived*, The Book Guild, Lewes, Sussex, England.
5. Ziman, J., (1978) *Reliable Knowledge, An Exploration of the Grounds for Belief in Science*, Cambridge University Press, Cambridge and London.
6. Mach. E., (1889) *Die Mechanik in ihrer Entwicklung* (2nd. ed.) Leipzig.
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BEYOND NIHILISM

Chris Goodman

1 Introduction

For something to be good or bad there has to be a point of view from which it makes sense to talk about it being good or bad. It makes no sense to say that it is good for hydrogen atoms to be fused into a helium atom, but it does make sense to say that sunlight is good for a plant. It makes sense to talk about the point of view of a living organism, but does not make sense to talk about the point of view of the universe. What sort of thing is a good? Well there seems to be two sorts of good—a good which enables a point of view to realise an end, and a good which is taken by that point of view to be an end in itself. If you seek to lose some weight it is good if you reduce your food intake. Something is an end in itself if it is a good without that good being a means to some other end. The end of losing weight for example could be for the sake of your health, which is taken be an end in itself. An end in itself is deemed to have no justification other than itself. We may however agree about what has to be done in order to achieve some end, but disagree about the desirability of that end. Conversely we may agree about the end, but disagree about the means. When disputes involve conflicts between different sorts of ends they become philosophical i.e. to what do you appeal in a dispute about ultimate ends? One response is to say that there is nothing to which you can appeal, and therefore the only sensible discussion we can have is about means. Polanyi however believes that there is a reality which underlies the possibility of an ultimate good i.e. an optimum integration of goods. Although he does not seek to define this good, he identifies it as a motive for our actions. He also observes that liberty is one of the conditions which must be in place if a pursuit of such an ideal is to be rendered possible. Nihilism however denies that there are such things as moral values. We can know how to lose weight, but we cannot know what is good or bad because there is no such thing as good or bad. For nihilists the suggestion that there are such things as objective goods is a fiction. On the grounds of an appeal to the natural sciences values are deemed to have no reality. In this account if moral principles are to understood they have to be converted into something which can be comprehended by the sciences. We might for example seek to understand moral ideals as an epiphenomenon of the struggle for survival. In accordance with this view we might seek to explicate what it is to be a moral principle in terms of the desire to impose our will.

Polanyi traces the source of nihilism back to critical thought. Attempts to justify values in critical terms fail. This indeed was the substance of the charges against Socrates. His opponents asserted that the critical questioning which Socrates encouraged served only to undermine existing values—for example piety—without putting anything back in its place. He therefore was judged to have corrupted the minds of the young[1]. Insofar as something was put in its place many of his followers, such as Charmides and Critias, became advocates of the doctrine that it is might which is right. The great defence of critical philosophy was given by Plato who argued—and in his various dialogues he sought to demonstrate—that the critical process is not an end in itself but a prolegomena to a more adequate understanding of the order of the universe. It is not myths or traditions but the order of the universe which justifies the reality of moral goods. Plato claims that Socrates turned away from the natural sciences to philosophy once he realised that there are different levels of explanation i.e. that talk about material causes neglects the existence of moral realities. The metaphysics which Plato and his school articulated however was itself subject to critical scrutiny—indeed in Late Antiquity the Platonic Academy became the most influential advocate of scepticism. Each time a value laden vision of the world collapsed however a new defence of values emerged, one which held out the promise of securing values against sceptical attacks. Platonic metaphysics for example was secured within the framework of a Christian theology. Each defence of values however eventually succumbed to the sceptic:

> The critical movement, which seems to be nearing the end of its course today, was perhaps the most fruitful effort ever sustained by the human mind. The past four or five centuries, which have gradually destroyed or overshadowed the whole medieval cosmos, have enriched us mentally and morally to an extent unrivalled by any period of similar duration. But its incandescence had fed upon the combustion of the Christian heritage in the oxygen of Greek rationalism, and when this fuel was exhausted the critical framework itself burnt away. (PK pp. 265-6)

The critical attack upon values led to nihilism. Why? Because in its quest for truth it acknowledges as real only that which it can secure, and it secures only that which it can define.

Once we define a reality it is subject to critical attack. Reducing realities into that which can be defined encourages us to explicate higher level realities in terms of

lower level realities. As part of the attempt to define the higher in terms of the lower, the reality of being a higher level reality is destroyed. It is not possible to explicate the aesthetic value of a sculpture or painting by Michaelangelo in terms of its chemical constituents. The critical project thus ends up as a vision of reality within which our experience of the world has no reality. Because a critical vision supplies us with something we can articulate—because it reduces what we know into something we can define—this is taken to be a price worth paying. In his post-critical philosophy however, Polanyi acknowledges some of the realities which critical philosophy has taught us to ignore or distrust. How does he do this? Well he begins with the natural sciences. He points out that what we call science is a practice which is rendered possible by a commitment to objective standards. A view which asserts that there is nothing in the world other than that which can be explicated by the natural sciences has no place in it for science. The sciences are a demonstration of the power of the human mind, and yet a reductionistic account of reality gives us a picture of the universe within which the reality of being a mind has no place—indeed within which everything that we most value has no place. For Polanyi it is correct to say that there are no moral facts independent of the sort of interests which make up a point of view, but it is also correct to say that there are no scientific facts independent of a point of view either. The identification of something as a fact requires the agency of a person. It is the denial that there are such things as persons, making claims about what they believe to be the case, which leads to a dualism between facts and values. Once we acknowledge the role of the person in the assertion that something is a fact, this opens the way for the role which is played by other values. Polanyi accepts that there is a difference between the end in itself we call truth, and the end in itself we call the good. Our personal commitment is greater in the validation of a claim about what is a good life for a human being than it is in the verification of a scientific assertion—i.e. the suggestion that the Earth is in orbit around the sun is a different sort of claim than a suggestion about how we ought to live—but for Polanyi both validation and verification are commitments to a reality which transcends the subjective (PK 202). On the grounds that it fails to give sufficient account to the constitutive role played by the human agent, Polanyi accepts the destruction by critical philosophy of the Platonic vision of the universe. It is we who create the concept of a good life. Once created however moral values have an objective reality which transcends our subjectivity. Just as our commitment to the ideal of truth prevents us from designating as true anything which we so desire, so the concept of a good life, once created, has a reality which transcends the subjective.

2 Moral realism

Polanyi argues that to believe that a thing is real is to anticipate that it will reveal itself in ways we do not expect in the future i.e. that it will manifest itself in ways we do not anticipate. Within this account being a moral ideal is a reality. It is however different from the sort of realities described by the physical sciences. It is for a start an emergent reality. As a higher level reality norms direct the possibilities left open by lower level physical realities. For Polanyi the physical sciences set out to describe the lowest stratum of reality within a hierarchically ordered universe. Within a reductionist account however physical laws explain everything—the possibility that higher level norms control lower level states must be denied. Within this account all higher level processes are determined by lower level processes. For Polanyi emergents are realities with their own powers. Each level of reality acts in accordance with its own principles. What it is to be a norm is indeed incomprehensible in terms of lower level physical realities. It makes no sense to try to comprehend what it is to be a value in terms of atoms. But because a reality is not tangible, or cannot be precisely defined—indeed the higher the level of reality the greater the likelihood that it is going to be intangible and difficult to define—does not mean that it is less real. Polanyi goes so far as to suggest that if we take unexpectedness rather than tangibility as our indicator of what is real, higher level realities could be said to be more real (TD p.33). Reductionism ends up with a vision of the universe within which those realities which cannot be defined in terms of lower level realities are abandoned. In its own terms critical philosophy ought not to be satisfied with a reductionist account. If critical philosophy is taken seriously it ends up as a sceptical solipsism. Because of its absurdity few thinkers, except those seeking to be consistent, are content to go down this path. Instead the logic of critical inquiry is suspended at a point sufficient to undermine the reality of values, but insufficient to undermine the validity of the sciences. Even this interpretation is too generous however. Critical arguments are used to discredit the reality of values, but those values which serve to render the sciences possible are left undisturbed. A social scientist for example may, on the grounds of an appeal to the determining character of economic or social structures, seek to relativise the findings of the natural sciences, but the scientific ground upon which this analysis is based is left undisturbed. The moral dimension which underlies reductionism is the claim that the only reality we ought to accept is the demoralised account which is delivered by the sciences.

In the account which Polanyi sets out, just as what it is to be an animal is an emergent from lower level physical realities, so what it is to be a human being is an emergent from lower level biological realities. It is our capacity to use a language which renders it possible for us to have moral ideals. We can formulate the concept of a good life, and then examine if our lives are in accordance with our ideals. The ability to use a language renders it possible for us to formulate moral ideals as ends in themselves—in whose pursuit we can subject our actions to critical scrutiny. From the evidence of early writings, and from evidence supplied by studies of less developed cultures, it seem clear that in our early symbolic life there is a lack of differentiation between our symbols and reality. i.e. to be in a mind is to be hypostasized into the world. This state of mind is described as mythopoeic i.e. in an extension of the animal instinct to take our experience as true the contents which make up our mental life crowd together on a single plain of reality. By fixing our experience however language renders it possible for us to create a point from which we can reflect upon our experience of the world—and in particular upon the adequacy of our attempts to describe the world. This reflection not only helps us to find better ways of achieving given ends, it also renders it possible for us to create abstract ideals which serve as ends in themselves. Once we commit ourselves to them these ideals become a source of intellectual duties (TD p. xi). As a result of these commitments we establish the possibility of new kinds of failure. It is only human beings which can be immoral. It would be absurd for example to charge an animal with rape. The moral thrust of critical philosophy is the assumption that to be satisfied with that which we are given—by our biology or our tradition—is to reject the claims which are made upon us as reflective agents by the emergent reality of ideals such as truth and the good. For Polanyi however a false conception of the critical processes has led to a situation where reflection undermines its own possibility. Because it begins as a commitment to higher level realities—which nurture within us the possibility of higher forms of life—Polanyi defends the critical project. His purpose is not to undermine the need for critical reflection, but to situate it within the limits associated with having a point of view. (Polanyi seeks to revise critical thought not defend uncritical thought.) Within the critical process our freedom to do as we please is overridden by our obligation to those intellectual ideals which serve as ends in themselves. This pursuit however relies upon the context which renders it possible.

According to Polanyi the misguided—and one is tempted to say mythological—assumption that we can secure an absolute ground for our evaluations, collapses under the weight of its own pretensions into nihilism. The passions which drive the critical project end up as a defence of immorality. The quest for detachment ends up as a vision of the universe stripped of moral values. In order to silence the sceptic, in order to establish a secure foundation for objective truths, less and less of what we take to be the case is accepted as a reality. This scepticism does liberate us from the constraints provided by familiar ways of looking at the world, but it has a destructive effect upon our values. It begins as critical reflection upon our traditions, in the light of appeals to objective ideals, and ends up as the denial that we can know objective realities—on the grounds that our judgements are not responsible choices but are culturally or naturalistically determined (KB 28). By seeking to relieve ourselves from the responsibility of holding beliefs—on the grounds that we can locate an absolute foundation for judgments—objectivism ends up as a nihilistic denial of the reality of the values which render it possible. Plato, disgusted by the execution of Socrates, withdrew from the life of the polis, and set out to defend the role which critical reflection can play in securing moral values. Aristotle followed Plato by arguing that understanding what is good for a thing depends upon us understanding its nature. Because we are rational animal, he takes our highest end to be the rational contemplation of the structure of the universe. This became the project of European metaphysics. Heidegger, like Polanyi, suggests that it was the attempt to secure Being which led ultimately to nihilism. For Heidegger the focus upon the event of disclosure rather than the context of the disclosure ends up as the claim that objects derive their meaning from the role they play in human ends i.e. it ends up as a nihilistic and technological understanding of the world [2]. According to Heidegger to be human is to be a nothingness [3]—an opening through which Being reveals itself. Our existence therefore is fundamentally groundless. From a Polanyian perspective however, the suggestion that we ought to accept that which is parcelled out by Being, is simply yet one more version of nihilism. Seeking to acknowledge the constitutive role played by the human agent does not inevitably lead to nihilism. Polanyi argues that what it requires us to do is accept the role which is played by human agents in the creation and pursuit of the ideals to which we submit.

The implication that we ought to submit to the epochal history of Being is simply yet one more version of the argument that we are unable to transcend the determining power of the reality identified by the philosopher. The solution to nihilism is not an uncritical acceptance of the context within which we find ourselves, but a humanistic defence of our capacity to understand the universe, and create moral ideals to which we aspire but

cannot achieve. For Heidegger humanism leads to nihilism:

> Every humanism is either grounded in a metaphysics or is in itself made to be the ground of one. Every determination of the essence of man that already presupposes an interpretations of beings without asking about the truth of Being, whether knowingly or not, is metaphysical. The result is that which is peculiar to all metaphysics, specifically with respect to the way the essence of man is determined, is that it is humanistic. Accordingly every humanism remains metaphysical. In defining the humanity of man humanism not only does not ask about the relation of Being to the essence of man; because of its metaphysical origin humanism even impedes the question by neither recognising nor understanding it [4].

Polanyi however identifies the situatedness of our existence as concrete opportunities for exercising personal responsibility (PK 322). The recognition which a free society grants to the independent pursuit of science, art and morality, is a consequence of acknowledging the role played by human agency. The difference between Polanyi and Heidegger comes sharply into focus when we consider that for Heidegger it was National Socialism which was his epochs most authentic encounter with Being—a view which he never felt any need to repudiate. Polanyi however takes National Socialism to be the inverted product of the attempt to secure an absolute foundation for values. Indeed, it was because he saw a link between National Socialism and the nihilism engendered by critical philosophy, that Polanyi set out his post-critical philosophy i.e. an approach which—via an acknowledgement of the role which is played by the human agent in the quest for objective realities—restores values by transcending the objectivism–subjectivism dichotomy.

3 A history of the Good

For Polanyi orientation to a good is constitutive of what it is to be a living being—and the pursuit of transcendent ideals is our highest level of being. The heritage which is generated by our pursuit of transcendent ideals is described by Polanyi however as consisting of everything about which we may be mistaken (PK 404). Like Aristotle he nevertheless takes mental goods to be our highest ends for its own sake. A flourishing human life for Aristotle is an active life lived in accordance with a natural order. On the grounds that man is a thinking being he takes our highest nature to be an escape from our merely human nature and our participation in the divine. This approach was developed further by the Neo-Platonists, for whom the absolute is mediated by a graduated hierarchy of spiritual beings; through which it is possible to ascend to the ecstasy of contemplating the divine. Within the Christian religion the role played by mediators—in particular by Jesus [of Nazareth] who was identified as the Son of God—humanised this ascent. The whole panoply of sacraments and relics served the purpose of bringing the individual soul into contact with the divine. All visible works drew their meaning from the part which they played in the progress of our merely human nature to the true and ultimate reality which is God. The response of Augustine to the scepticism which became such a feature of the intellectual life of late antiquity was to assert that the Christian revelation requires us to make a leap of faith—a revelation which once accepted was comprehended in terms of a Neo-Platonic philosophy. Supporting this view Anslem set out to elucidate the doctrines of the Christian revelation by the use of dialectic. Inspired by the example of Avicenna and Averroes the Scholastics aspired to reconcile Christian theology with what they knew of Greek—and in particular Aristotelian—metaphysics. It was the reaction against this philosophical-theological tradition which laid the intellectual foundations of the modern era. As far as Polanyi is concerned this rejection took place with good reason. The metaphysics advocated by Plato mythologized the natural world by attributing to it more meaning than was justified. It makes no sense to comprehend physical laws as part of the moral goodness of the universe—a view common to both Plato and Aristotle. The physical universe is morally indifferent. There is no such thing as cosmic rightness, to claim otherwise is to adopt a way of looking at the universe which has long since been discredited—discredited that is by a revival of the tradition of the natural sciences.

The origins of modern science can be traced back to the late medieval Nominalist reaction against Scholasticism. For Nominalists such as William of Ockham the sovereignty of God is incompatible with the idea of cosmic order i.e. the suggestion that it is nature which defines what it is to be good and bad infringes upon the sovereignty of God. Once the physical sciences were separated from the realm of values this prepared the way for a revival of reductionistic conceptions of the universe i.e. without any intrinsic purpose will became the only source of normative order. For the Nominalists divine will is the origin of rightness. A moral life is a life lived in accordance with divine commandments. The conflict between Greek metaphysics and Christian beliefs led in short to Nominalists seeking to disengage the revealed truths of religion from any sort of reflection upon the natural order, on the grounds that to deduce the nature of God from any natural theology is to seek to enclose God within the realm of contingent objects. God, although he created the world is both unknown and unknowable, and our human agency—which enables us to transcend our finitude and accept the Christian revelation—must be

separated from the natural world. It was not the revival of interest in experimental inquiry however, but the assertion by Neo-Platonists thinkers such as Nicholas of Cusa and Marsilio Ficino that mathematics is the key to discovering an order among the contingencies delivered by our experience, which was the single most important influence upon the development of the New Sciences. Following the Nominalists however the new sciences did not seek to comprehend the universe in terms of ascending levels of being, but as matter in motion acting in accordance with the laws imposed the universe by a divine creator—with man a knower apart from the world. The Renaissance assertion of the importance of human agency, if it is not accompanied by an objective ground for values, is vulnerable however to nihilism. For Polanyi avoiding a collapse into nihilism requires there to be a reality to our commitments i.e. objective standards of rightness. In the early modern period God remained the ground of all moral values. The distance between God and man, a view elaborated by Protestant theology, led some however to search for a more secure foundation for moral values.

In modern moral philosophy the liberty of God over nature is transferred from the divine creator to man. Liberated from a teleological vision of the universe philosophers began to comprehend humanity as a self-conscious ego radically free to manipulate the world in accordance with our own ends. Insofar as this seeks to acknowledge the importance of human agency, this fits in with the position taken by Polanyi. In the absence of any appeal to moral realities however, the assertion of freedom which accompanies the replacement of a hierarchical conception of cosmic order in favour of an order which is constructed by the subject—for example the replacement within political thought of a status view with a contract view of human society—is vulnerable to nihilism. Attempts were made therefore to secure moral values by grounding them within rational procedures i.e. within abstract rules rather than a vision of the good. In the Enlightenment, the defence of the freedom of the individual to be sceptical about sources of authority, was thus accompanied by a respect for reason as the foundation of our moral and political order. Kant derives our dignity as human beings from the capacity to rise above the laws of nature and decide for ourselves the way in which we ought to live i.e. we have the autonomy to legislate for ourselves. Rejecting the heteronomy of submitting to religious dogmas—on the grounds that this leads to fanaticism—Kant advocates a kingdom of ends within which being a rational agent is an end in itself i.e. a society grounded within laws which respect the freedom of all rational beings to pursue their own conception of the good. His defence of human liberty is thus derived from an ethics grounded within a submission to abstract reason i.e. only that which a rational agent can universalise is a just object of political allegiance. Within what became known as Utilitarianism, the moral dimension of rationality is that it enables us to identify those actions which serve to maximise the satisfactions of the greatest number of people i.e. instead of seeking to impose a conception of the good our reason ought to be used to calculate the optimum way of achieving the ends we create for ourselves. For some the best way to do this is for the State to direct society in such a way that the satisfactions of all its members can be maximised. For others a better way of doing this is to let the market maximise the number of satisfactions which finite resources render possible. In both accounts a moral action was identified as that which increase the satisfactions of the greatest number of people.

But if we seek to disengage reason from realities—if we seek to disengage evaluations from facts—we are left with a conception of reason as a means to an end which is devoid of any content. There are also calculation problems. Given that every situation we encounter is different, guidance is required about how to apply abstract rules. According to Anscombe modern ethics is useless and harmful, because what it is to be a moral obligation is only intelligible within a context which has been abandoned i.e. terms such as good and bad—for example this machine ought to be oiled because it runs badly without oil—rely upon a context [5]. Before modern philosophy this context was supplied by a metaphysics. For those who were Christians this context was supplied by a Divine lawgiver. In the absence of a shared context the attempt by Enlightenment thinkers to give a new content to moral laws fails. The reason for this failure is that modern ethics seeks to separate out facts from values. Modern ethical theories are abstract formalisms which make great demands upon us without persuading us why we should follow them. Anscombe suggests returning to a virtue account of ethics. But is it possible to make sense of what it is to be a virtue without an Aristotelian metaphysics? For MacIntyre

> A virtue is an acquired human quality the possession and exercise of which tends to enable us to achieve those goods which are internal to practices and the lack of which effectively prevents us from achieving any such goods.[6]

From a Polanyian point of view however, while abstract rules cannot determine what we ought to do in specific circumstances, and all judgements therefore need to be situated within the context of a local practice, these practices cannot define what is it to be a moral good. What it is to be a moral good transcends local practices. It is a transcendent ideal to which those seeking to reform existing practices appeal. An appeal to local practices

as an end in itself is a submission to relativism. If we are to make moral judgements, we must draw upon that with which we already familiar—this is the truth in the anamnesis doctrine—but the local practices upon which we rely may be immoral. This is the truth in the Enlightenment claim that morality requires a universal foundation. By dividing facts from values however, the attempt to substitute an abstract formalism for a vision of the good life fails to prevent a collapse into nihilism.

4 Moral inversion

In order to introduce moral passions into a world devoid of objective values—devoid that is except for those rules which are introduced by abstract reason—Romanticism focused upon the immediate, spontaneous, and informal process through which human agents bring meaning into the world. It is in accordance with Romanticism that Polanyi seeks to acknowledge the role played by intuitive feelings, and the role which the imagination plays in the discovery process. In the absence of the conviction that the universe has a moral order, Romanticism ends up however with no ground for value other than that which is introduced by the creative agent. In its restless pursuit of meaning the imagination fails to secure its values and becomes nihilistic. According to Polanyi one of the sources of Romantic immoralism is Rousseau, who sought to defend a new vision of what it is to be a modern society

> He saw that it implies an unrestrained individualism, demanding absolute freedom and equality far beyond the limits imposed by any existing society. He saw, next, that such absolute sovereignty of individual citizens is conceivable within society only under a popular government, exercising absolute power. And thirdly, he anticipated the ideal of an immoral individualism, asserting the rights of a unique creative personality against the morality of a discredited society (KB p. 10).

Polanyi views the desire for a total revolution as a variation of the desire for absolute individualism i.e. if it is we who are the source of all values then our primary moral task ought to be the destruction of all existing institutions and their replacement with a society which acknowledges the reality of our freedom:

> While the Jacobins were guided by the notion of the general will in their political revolution, the Romantics took their bearings from the notion of the individual will of the natural man in their opposition to the cultural and spiritual degeneracy of bourgeois society. [16]

The attempt to explicate the relationship between freedom and nature—between the noumenal realm of freedom and the phenomenal realm of nature—was one of the central concerns of German Idealism. The solution which Hegel offered was to assert that true freedom takes place when self-conscious agents live in accordance with the development of the spirit.

In his philosophy of history Hegel argues that different epochs can be understood as different episodes in the self-realisation of the world-spirit. Because reason is taken to be immanent in history, it is deemed to be irresistible, rendering an appeal to moral ideals redundant:

> The first glance at history convinces us that the actions of men proceed from their needs, their passions, their characters and talents; and impresses us with the belief that such needs, passions and interests are the sole springs of action—the efficient agents in the scene of activity. Among these may, perhaps, be found aims of a liberal and universal kind—benevolence it may be, or noble patriotism; but such virtues and general views are but insignificant as compared with the World and its doings...Passions, private aims, and the satisfaction of selfish desires, are on the other hand, most effective springs of action. Their power lies in the fact that they respect none of the limitations which justice and morality would impose upon them. [8]

Despite his opposition to subjectivistic irrationalism—such as the claim by Fichte that moral ideals have no reality because it is we who create the world—his defence of a rational ethics and politics served only to deepen the appeal of nihilism. While Robespierre justified his actions by appealing to moral ideals, in his transformation of socialism from a utopia to a science, Marx rejected any need for such a justification, arguing that it is only through violence that a new society is created. Polanyi calls this a moral inversion i.e. moral passions are transformed into a defence of immorality. Only those motives which can be explicated in terms of the sciences are judged to have any reality. This moral inversion was personal as well as political:

> In France the beginnings of a nihilism motivated by moral protest go back two hundred years. Diderot speaks of it in 1763 in *The Nephew of Rameau*, whose immoralism justifies itself by the hypocrisy of society. The Marquis de Sade gave an extensive account of lust and cruelty, deriving a sense of intellectual and moral superiority from a conception of man as a mere machine and from the theory that law is but the will of the stronger (SEP p. 87).

These two kinds of moral inversion, political and personal, may appear to be contradictory since one serves political ends, and the other promotes a radical individualism, but both derive from a rejection of moral ideals. It was the German followers of Nietzsche who supported Hitler in the years after the First World War, just as it was the French followers of Nietzsche who defended Stalin after the Second World War. The primary target in both cases was the bourgeoisie:

> A great wave of anti-bourgeois immoralism sweeping through the minds of German youth in the inter-war period formed the reservoir from which the SA and SS were recruited. They were inspired by the same

> truculent honesty and passion for moral sacrifice which turned the nihilists of Russia, whether romantic or scientistic, into the apparatchicks of Stalinism (KB p. 17).

If value cannot be found in the world, then the recognition that values are absent from the world becomes the primary moral project. Within the realm of high culture Modernism saw its task as putting into question all traditions of meaning. The creation of new forms was an attempt to return us back to an authentic experience of the world —one in which there is no meaning. The aesthetic landscape which is created by a nihilistic rejection of all established values is very familiar to us. The opposition to metre and rhyme in poetry, the rejection of the picturesque in painting, the disapproval of harmony and melody in music, have become a new orthodoxy. Surrealism views a total absence of values as an ideal. For those who call themselves as Post-Modernists there is no truth, no authority, no meaning, except that which is imposed upon the world

> It seems obvious that the rebellion which evoked modern art and moved it on for a century cannot fail to exhaust itself, once its product will have ceased to affirm anything and hence leave nothing to rebel against (KB p. 89).

But in the absence of any ground for objective values, from where is the source of regeneration to come? We are offered the possibility of either reducing our ideals into phenomena which can be explicated by one of the sciences, or accepting that the only foundation of moral norms is that which is supplied by the arbitrary conventions of a local culture.

5 Transcendent ideals

For Polanyi the recognition that all claims presuppose a framework of interpretation is not a defeat for the mind, it is simply a consequence of having a point of view. This does not undermine the validity of the attempt to go beyond a point of view and identify realities which transcend the limitations of our starting point. But what sort of reality is a moral reality? Polanyi seeks to explain what it is to be a value in terms of a hierarchical conception of reality. Higher level states are emergents which realise possibilities left open by lower level realities. Within this account it makes no sense to talk about the lower level physical realities from which all living systems emerge in teleological terms. It is living organisms which introduce purposes. To talk about the sun having a purpose, if this is claimed literally, is a mythopoeic way of looking at the world i.e. a projection of human meanings upon the world. We may talk about a body of water seeking to find the lowest possible level, but it is clear that water does not have a purpose. The physical world is meaningful only insofar as it plays a role given it by some point of view. A meaning is generated when a point of view integrates particulars. A value is the end or ends served by that integration. There are different sorts of ends. One of the ends which constitute and orientate what it is to be a living organism is survival. For a living being this is an end in itself. In order to flourish living organisms require a specific set of conditions. Desirable conditions are good, undesirable conditions are bad. The exact nature of these conditions depends upon the organism. Just as it would be absurd to describe water as having a purpose, it would also be absurd to describe a plant as having ideals. Having an ideal requires a mind. To be a moral ideal is to be created by a mind. It also requires a language within which it is possible to formulate the ideal of a moral good. We do not expect an organism which is unable to formulate what it is to be a moral ideal to act in accordance with a moral ideal. It would absurd for example to seek to charge an animal with rape. It is because we judge other human beings as having the potential for moral deliberation, that we condemn them when we judge their behaviour to be immoral. On the grounds that moral values are created by minds, reductionists argue that it makes about as much sense to talk about moral values as realities as it does to talk about water having a purpose. In this account moral values are simply an epiphenomena of lower level physical laws. But when they are confronted with behaviour they consider to be immoral, reductionist forget this claim. If they rely upon it, as in the case of a moral inversion, it is in order to achieve a moral purpose.

In the Enlightenment some claimed that moral actions are actions in accordance with rules, rules which we invent. This however fails to explain why we believe everybody else should follow our rules. What is the purpose we hope to achieve by following rules? The purpose we seek is a good life. A good life in this account is a life lived in accordance with moral rules. These rules constitute an end in itself. But why be rational? Relativism is the claim that what we identify as a good life depends upon your assumptions. Some relativists assert that we ought not to impose upon others our conception of the good. What we ought to do is reject the belief that there are universal goods. Other relativists claim that because there are no moral realities, we ought to seek to impose our view of the good. Both these approaches have a vision of what it is to be a good life. It seems then that relativists, despite what they say, believe in the reality of moral values. When confronted with behaviour we take to be immoral, we do not act as though how we behave is no more than a matter of opinion. Despite what is asserted, we are no more satisfied by the claim that how we treat other people—or how other people treat each other—is nothing more than a matter of opinion, that we

are by the claim—equally often asserted—that what we call true is nothing more than a matter of opinion. It may be claimed that all such judgements are nothing more than epiphenomena of lower level processes, but when confronted by behaviour we judge to be immoral, we act as though moral judgements are not simply a matter of opinion. But if we do not take that to which we appeal as being arbitrary, to what do we appeal? Polanyi identifies moral values as an emergent reality. To the extent that what it is to be a moral value is dependent upon us for its possibility, together with the recognition that what it is to be a moral value cannot be simply read off from the world—i.e. it is we who create the different conceptions of what it is to be a good life for a human being—modern philosophers were justified in seeking to reject a cosmological conception of the good. Once created however, what it is to be a good life for a human being has an emergent reality. Although transcendent ideals do not exist in the absence of the agent which creates them, once created they have a power of their own. Although it is we who formulate the concept of truth, we cannot call true anything we so desire. We call true that which we believe to be the case. In the same way, just because it is we who create the ideal of a good life, this does not mean that we can identify anything we so desire as a moral good.

Truth for Polanyi is a value—we can make good or bad claims. But is truth a moral value? Although we create the concept of truth—if you accept the concept of truth this imposes upon you certain obligations—it seems that things as true or false independently of what we believe to be the case in a way which seems different from moral values. We can talk about pure water being colourless as a claim which is true or false independently of what we believe to be the case, but do we talk about moral choices being right or wrong independently of what we take to be the case? A good life for a human being is something we create. But that does not make it arbitrary. It is not something which can be read off from the structure of the universe, or from what we take to be the will of the creator, but neither is it something which is wholly subjective. Polanyi identifies a moral good as a trans-natural integration which imposes an order upon the universe which does not exist prior to our imposition of this order To this extent—although there is no royal road to truth—a truth claim is different from a moral claim. We assess a moral order however in accordance with the constraints provided by our desire to identify the actions which are consistent with what it is to be a good life for a human being. We create moral values in the expectation that they will be universal i.e. that somebody with the same goal and the same evidence will reach the same conclusions. This does not have imply that a single form of life is the optimum for everybody. A vision of the good life may contain within it an awareness that people—and the contexts within which they find themselves—are very different. This however can be built into a conception of the good i.e. our vision of the good may contain within it the importance of acknowledging context. Nor do our claims have to certain. Our conception of what it is to be a moral claim may have fallibility built into it as an essential element. It is because he identifies moral goodness as a transcendent ideal that Polanyi seeks to defend the need for a free society i.e. decisions require the freedom to choose. A free society however is not a society which is neutral about values, it is a society which dedicated to the pursuit of transcendent ideals. Just as it only makes sense to talk about water being a good in relation to the purposes introduced by a living organisms, so it only makes sense to talk about something being a moral ideal in relation to the purposes which are created by a reflective agents. We can however transcend the objectivism implicit in the assumption that we can secure moral truths, and the subjectivism which is implicit in the denial that there is such thing as a good life for a human being, by noting that once we create the ideal of a good life it makes demands upon us which are not arbitrary.

For Polanyi there are different kinds of articulate dwelling places—we try to verify a scientific claim, but we seek to validate a moral claim. Both truth and the good however impose obligations upon us when we pursue them. Once we commit ourselves to transcendent ideals, the pursuit of excellence which these ideals engender creates universal obligations. There may however be conflicts between our ideals. There may be conflict for example between the quest for truth and the pursuit of moral ideals e.g. experiments within Nazi concentration camps provided scientific researchers with useful data about the consequences of sudden changes in body temperature. We may try to justify such experiments on utilitarian grounds, but this may lead us to question the validity of utilitarianism as an account of our moral life. Once formulated the concept of a good life has a power of its own. We may argue about what makes up a good life, but questions about experiments on humans are not something about which we are indifferent. If we are indifferent about these questions, this is taken to be a inhuman. Because we are social animals, questions about what it is to be a good life inevitably involve questions about how we treat other human beings. The Nazi party for example identified something called the Aryan race as its moral community. All those judged to be outside this community were identified as being not worthy of equal moral consideration. For internationalists however the whole human race is our moral community. Some claim that

higher animals ought to be included within the boundaries of our moral community. It is not necessary however for us to identify higher animals as moral agents for us to treat them morally. All that we require is a conception of what it is to be a good human being. Debates about how we ought to live accompany the reality of being human. Because we are self-conscious reflective animals, we ask ourselves how we ought to live. Once we formulate the ideal of a good life, it has a power over us which we cannot ignore. If we seek to ignore the demands which our possession of the concept of a good imposes upon us, reflection—in the form of our conscience—serves to remind us. The only thing which can silence our conscience is a sincere belief that our actions are in accordance with the actions of a good person. If we do not have a conscience this is considered a defect in our humanity. If it is considered that we satisfy ourselves too easily about the mortality of our conduct, we are judged to be a person with poor moral judgement. That to which we appeal is the ideal of a good life—the actions which would be taken by a good person. The defect of modern philosophy is its lack of the reality of the good. But from a modern point of view ancient philosophy neglects the dependence of moral ideals upon ideals generated by the human agent. Once we acknowledge the role played the human agent, how do we decide which view to believe? When making up our mind about a moral issue we draw upon our sense of the world i.e. which vision of the good life we find most plausible? To this extent moral judgements are a sort of remembrance. But Polanyi does not believe that we can ever secure a vision of the good. What we take to be the case may turn out to be false. Because transcendent ideals are commitments to the universal, this obliges us to move beyond our point of view. Engaging with other points of view is part of what it is to be a moral agent. Reflection renders it possible for us to step back from our immediate concerns in a state of disinterested contemplation. It does not follow that because there is no science of morality that values are not objective. What is vague in the abstract can become compelling within the context of a particular situation. Polanyi identifies transcendent ideals as a reality because they have powers of its own. Once we create the idea of moral good, and commit ourselves to it, our obligation to its standards exerts a power over us. When we tell the truth, although the concept has no existence independently of the minds which create it, it imposes upon us its own demands. Polanyi rejects the claim that truth is simply that which is useful to us in the way of belief. If you reject the reality of the ideal of truth you open the way for those who call true that which they find useful, undermining those who appeal to truth when rejecting claims which are false. When he writes about the Hungarian 1956 uprising Polanyi declares that

> Its typical utterances manifest the deep emotional upheaval caused by recognising once more that truth, justice and morality have an intrinsic reality (KB pp. 35-6)

In teaching its own form of excellence, truth claims function like any other form of normative practice. Its judgements have a universal intent, and bear upon a reality which may never be exhaustively disclosed.

If moral debates reduce to what sort of life is a good life for a human being, we are led to seek to understand the qualities which serve to constitute what it is to be a good life. These qualities are called virtues. What is a moral virtue? Moral virtues are an acquired disposition which help us to live a good life. Why be moral? Aristotle seeks to understand virtues by situating them within the context of a teleological conception of man i.e. a virtue is an excellence which enables people to move towards metaphysically determined goals. This teleological conception of the universe has long since been abandoned. But if Aristotelian metaphysics is untenable, and the attempt to secure what it is to be a good life in terms of abstract rules has failed, what is it that grounds moral values? What grounds moral values is a transcendent ideal—the concept of the good. Once created it draws us to the possibility of higher forms life. It motivates us to behave in a manner which is inexplicable in biological terms i.e. if survival and reproduction are our highest ends in themselves why is human history full of examples of people who have sacrificed these ends for their ideals. It is the love of truth, goodness, and beauty, which has been the inspiration for our highest achievements as human beings. A history which fails to appreciate this is useless. This pursuit of transcendent ideals however is a quest which takes place within a context. It makes no sense to seek to understand what it is to be a transcendent ideal apart from the point of view which renders such a pursuit possible. The desire for an absolute viewpoint—which is to say the desire for no viewpoint at all—ends up responding to the inescapable reality of having a point of view by inverting itself into a nihilism. Polanyi responds to the nihilism which objectivism —and its alter ego subjectivism —generates by advocating a vigorous humanism. It is not becoming a God but becoming a human being which is our highest end. Our humanity is not something which was given to us by a God, it is something we create. It was because of the evolutionary advantages delivered by self-conscious reflection that a pursuit of transcendent ideals becomes possible, but once created our ideals have a power over us which transcends the subjective. Polanyi identifies what it is to be a human being as a trans-natural integration which, in the pursuit of ends we never reach, integrates the given into a higher

level of reality. It is in this post-critical sense, and this sense only, that Polanyi understands the concept of God.

6 Conclusion

The post-critical transcendence by Polanyi of the objectivist-subjectivist distinction is essentially a re-affirmation of philosophical humanism. As Isocrates declared in a speech written in 368 BC

> In all our other characteristics we are no different from animals: indeed we are inferior to many of them in speed and strength and other faculties. But once we gained the power of persuading one another and of indicating our desires to ourselves, we broke free from savagery, came together and founded cities, created laws, invented skills; logos is what has created for us virtually all our inventions. It has given us our laws about just and unjust, shameful and honourable . . . With its aid we argue disputed matters and pursue enquiry into the unknown, for the arguments by which we convince others when speaking are the same as we use in abstract thought. To speak of its power in a word we shall find that nothing done with intelligence is done without logos. Logos is the guide of all acts and thoughts, and the most sensible people use it most. Men who dare to insult teachers and philosophers should be loathed like sinners against the gods. [9]

As reflective agents we create transcendent ideals which inspire us to transcend our subjectivity and pursue objective realities. This is no less an achievement for being a pursuit which is subject to the limitations of human agency, for it realises that which is highest in us. The quest to ground philosophical claims by securing a path to the absolute was abandoned due to erosion caused by scepticism, forcing its advocates onto lower level paths, and the passionate denial that there are such things as higher level realities. The ideals in whose pursuit our civilisation was constructed were explained away as nothing more than cloudy emissions from lower level realities. By situating the pursuit of transcendent ideals within a human context, within a context that is which is neither merely animal, nor unconditionally divine, Polanyi manages to both endorse their reality, and acknowledge their dependence upon the conditions which render their pursuit possible.

Dept of Philosophy,
University of Sheffield

Notes:

1. Plato, *The Last Days of Socrates*, trans. Tredennick, Penguin 1954, p.54.
2. Heidegger, *Basic Writings*, ed. Krell, Routledge, 1993, p.332.
3. Heidegger, Being and Time, trans. Macquarrie and Robinson, Blackwell, 1962, p.321.
4. Heidegger, *Basic Writings*, pp. 225-6.
5. G.M. Anscombe, *Ethics, Religion and Politics*, Blackwell, 1981, pp.26-42.
6. A. MacIntyre, *After Virtue*, Duckworth, 1981, p. 191.
7. Gillespie, *Nihilism before Nietzsche*, U. of Chicago P., 1995, pp. 104-5.
8. Hegel, *Philosophy of History*, trans. Sibree, Dover, 1956, p. 20.
9. Quoted by J.K. Davies, *Democracy and Classical Greece*, Fontana, 1978, p. 175.

DISCUSSION

OLDHAM, TEMPLE AND POLANYI?

Some Contrasts for Discussion

Harold Turner

1 Oldham and Temple

In these pages I have already raised the question of the relation between two major figures in Britain earlier this century—John Macmurray and Michael Polanyi[1], and Phil Mullins' research in reply[2] suggests that J. H. Oldham used to encourage Polanyi to read Macmurray, but apparently without success.

Oldham himself seems to have been a kind of culture broker in his day, especially with his think tank the Moot, which included the rather maverick Christian Marxist John Middleton Murry, and the Jewish sociologist Karl Mannheim, together of course with the secular Jew turned non-practising Catholic, Michael Polanyi. These were all laymen. We await with great interest the approaching publication of Keith Clements' biography of 'Joe' Oldham, which will be the first. Since Oldham was perhaps the greatest Christian layman of the earlier part of this century in Britain a serious biography is long overdue. Recently I read John Kent's biography of the public life of Archbishop William Temple, the best-known Archbishop of Canterbury and Anglican churchman of this century, who has already had several biographies. Since Temple and Oldham were near contemporaries, and both operated in the public sphere with its centre in London, the relation between these two outstanding Christian men, ecclesiastic and layman, becomes a matter of interest.

Despite its lay emphasis one might have expected Temple to have had some dealings with the Moot, if not to have been an actual member. After all, another ecclesiastic was a regular member, John Baillie from Edinburgh, later to become Principal of New College there, and Moderator of the Church of Scotland—Archbishop for the year, as it were. Through the Moot Temple could hardly have met Polanyi, who joined only three months before Temple died; in any case the Moot is marginal in Kent's biography and rather negatively and casually presented; but I wonder if they ever did meet in any other context.

2 Temple and Polanyi

A cursory search finds no reference to Temple in the indices to Polanyi's works, but Joan Crewdson's major work on Polanyi recognises that the two had much in common at the point of their analysis of economics and society, and devotes a long note to this. Polanyi had published his *The Contempt of Freedom* essays in 1940, the second of his critiques of Soviet economics and society. Temple published his most widely influential book, *Christianity and Social Order*, in 1942. True, their lives in Britain overlapped only for about a decade before Temple's death in 1944, and Temple had no special interest in science as such, but Crewdson sets forth the similarity of their concerns in her note, with extensive quotations.

Polanyi analysed the economic order in terms of the polycentricity essential in the structure, as against the central command system seen in the USSR, which in the long run would not work. At our end of the century no further comment on this is necessary. Polanyi also emphasized the centrality of the personal, and his further works went on to expound this in other areas.

Whether influenced by Polanyi or not, Temple placed these emphases in an explicitly Christian context. His principle of 'functional evolution' involved allowing 'whole departments of national life to order their own affairs', a principle similar to the neo-Calvinist notion of 'sphere sovereignty' in Holland, to Emil Brunner's 'orders of creation' in his ethics, and to the current Catholic 'subsidiarity' and 'mediating institutions'. All of these universes of discourse could profit from dialogue with Polanyi's quite different terminology but similar principles.

Temple could be said to have a more practical and domestic approach than had Polanyi. He was deeply concerned about the workers in British industry and in the plans for social reconstruction after World War II that dominated much public discussion in Britain and were congruent with Temple's Idealist philosophy. This in no way marks him off from Polanyi in these matters, but reflects Polanyi's wider experience in Europe, and especially his first-hand contacts in the USSR in the 1930s that mark a watershed in his intellectual interests.

3 Theology of sin and evil

Beyond these common concerns, as I read Kent's biography and some of the other evaluations of Temple, I encountered Temple's theology of sin and evil. This was more a part of his idealistic philosophy, even of a neo-Hegelianism, than derived from a biblical and orthodox stance. Temple's universe was in process of development through various hierarchies towards Mind, wherein the Incarnation was a necessary part of the process, as both its goal and crown. This development proceeded apart from any special need for an incarnation providing an atonement to deal with the effects of the Fall. Temple's ability to provide deeply moving accounts of the passion of Christ does not seem to have altered what is an evolutionary theology.

Inevitably I recalled my similar critique of Polanyi's position about sin and evil. As I have written elsewhere:

> For him, grace and its dealing with the human problem is a constant historical process in-built in creation, and not a particular, unique historical event Focused on Jesus. The cross and resurrection as critical events without incipient forms or parallel in the past find no place in this cosmology, and the 'new creation' arrives through the working out of the in-built rescue services of the old creation and so is not radically new.

I then suggested that this reflects an adequate view of the radical nature of evil, and I now see Temple occupying a similar position.

I had also remarked that Polanyi held his position despite the horrifying evils he had known in his time. The same could be said of Temple who had also lived through the two World Wars and the obliteration bombing of German cities, the world epidemic of 1918-19, the rise of Nazism, the Great Depression of the thirties, and the horrors of communism. Temple on the one hand, in his privileged position, had much less personal contact with these radical evils than Polanyi, the army doctor, the Jewish refugee from Germany. the visitor to Russia. In addition Polanyi had his penetrating theory of moral inversion, which can make an original contribution to Christian theology, but seems to have provided no more depth to his theory of evil than that found in Temple.

I present these remarks as matters for discussion and further enquiry, as we look back from this end of the century at some of the great figures of the earlier decades. Many questions concerning their interactions and differences remain, and as a quarry for further research I offer what I found to be striking contrasts between Temple and Oldham, in the accompanying table which is obviously oversimplified.

	J. H. OLDHAM	WILLIAM TEMPLE
1	Scottish	English
2	Free Church of Scotland	(established) Church of England
3	Modest origins	Privileged upper class
4	Layman	Ordained
5	Worked with top secularity	Worked mainly with top Anglican clergy and laity
6	and the unorthodox (Middleton Murry) or Jews (Karl Mannheim)	and mainly with the orthodox and the ecumenical church movement
7	Not a philosopher	A Neo-Idealist philosopher
8	Back-room, think-tanks	Up-front lectures, sermons
9	Missionary focus, Sec. I.M.C.	Domestic and Western focus
10	Open to the Continent	More parochially English
11	In wider politics: Africa, Colonialism, race issue	In domestic rather than international politics
12	Awareness of cultural issues	Social and moral issues
13	Wears well as a prophet of the future and writings still speak eloquently	Idealist and naive re future, so writings have dated except for warnings re Christendom
14	Eschatological outlook, realistic view of evil	Developmental theology with Incarnation as climax

Clements' biography may not support these contrasts, but in view of the close relation between Polanyi and Oldham they carry the further suggestion that there may be little relation between Polanyi and Temple. Indeed, that Temple's place in the basic development of twentieth century Christian thought turns out to be somewhat marginal. Since Polanyi took much of his theology from Oldham, we may risk an extrapolation from this table to at least sketch in Polanyi's position at some points, except, it appears, for No. 14, his Christology (where he is virtually a Unitarian) and his view of evil. This is not surprising, since these two themes relate in an interactive circular rather than in a linear fashion.

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BOOK REVIEWS

Christian Thinking and Social Order: Conviction Politics from the 1930s to the Present Day
Ed. Marjorie Reeves
London, Cassell, 1999, pp. 224..
ISBN 0-304-70247-1, hbk £45;
ISBN 0-304-70248-X, pbk £16.99

In this issue of *Appraisal* and in Vol. 1 No's. 2 and No. 4, Harold Turner and Phil Mullins have examined Polanyi's connections with Macmurray and Oldham and others connected with Oldham, while in *Polanyiana* Éva Gábor has looked at Polanyi's role in The Moot, a group convened by Oldham. It is no surprise, therefore, that Polanyi's name occurs in the blurb for this book as well as in the text, though one wonders as to what influence Polanyi's ideas actually had on the other figures.

For this book deals, not with its professed subject-matter *tout court* but with a particular group of persons, circles, publications and organisations, all connected with or stemming from the work of J. H. Oldham, rather than with the whole range of Christian thinking in the last seventy years. As well as editing the collection, Dr Reeves has herself co-written 5 of the 13 chapters. She and most of the other contributors also took part in the groups and endeavours about which they write, and many persons —William Temple, Sir Walter Moberly, Sir Fred Clarke, T.S. Eliot, Karl Mannheim, Alec Vidler, H.A. Hodges—appear and reappear.

Pt I, 'Themes of the 1930s' by Eric Lord and Marjorie Reeves, sets the scene and looks particularly at Liberal Protestantism, Barth and Reinhold Niebuhr, the SCM, and 'three prophets'—Oldham, Macmurray and Niebuhr again.

The seven chapters of Pt II trace the effects of Oldham's efforts in a chronological though necessarily overlapping sequence.

William Taylor and Marjorie Reeves survey the Moot which Oldham organised. Apart from the membership, organisation and dynamics of the Moot, they concentrate on the subject of education, and especially the papers prepared by Fred Clarke and Karl Mannheim. Marjorie Reeves appends a note on three refugee thinkers in the Moot: Alfred Löwe, Michael Polanyi and Mannheim. The Moot was especially important to the latter two. Yet, while both benefited from it, it seems that Mannheim, and his absurd yet dangerous notion of 'planning for freedom', greatly influenced it, while there is little evidence of any influence exerted by Polanyi's ideas on corporate or deliberately organised order and the spontaneous order that arises as an unintended by-product of individual and group initiatives and transactions (first published in 'The growth of thought in society', 1941).

Marjorie Reeves and Elaine Kaye follow with *The Christian News-Letter,* which Oldham founded, and then Daniel Jenkins and Marjorie Reeves on the Christian Frontier Council, a group of 20-30 individuals who, among other activities, provided the *Christian Newsletter* with expert opinion, and sought to be active on the frontier between 'the normal work of the Church and the general life of society'. To judge by the evidence of these papers, one is pleased to see that there was attention to expert opinion whatever its source and no intention to set a Christian party line on particular issues—so very different from what has happened in recent years. Yet there is no direct evidence of Christian appropriation of economics, where Polanyi would have provided a link with economists of the stature of John Jewkes and Colin (later Sir Colin) Clarke, a deficit which has remained to this day, when one proves one's Christian sincerity by denouncing markets and ignoring the clearly foreseeable consequences (usually counter-productive) of one's proposals.

Roy Niblett and Marjorie Reeves, in 'A ferment of ideas on education', return to the 'Aux', the Auxiliary Movement stemming from the SCM in the 1930's, and to the Institute of Christian Education, founded in 1934. They proceed via the work of Sir Fred Clarke, the 'Age of Planning' and the establishment of Institutes of Education, to the rise of managerialism, and then retread some of the ground by surveying questions of Christian principles and commitment in education.

There is yet more on education to come. Indeed, it, rather than social order in general, is the dominant theme of the book. But at this point, one other deficiency, both then and now, ought to be noted. Although Dr Reeves, in the chapter just mentioned, does consider the 'total environment', I found little questioning of, or dissent from, the stock identifications of education with schooling and of schooling with a system of State schooling, of higher education with formal higher education and that in nationalised institutions, and the total neglect of the great missing third party of parents and homes. This is very surprising in a Christian context, and shows just how collectivist assumptions still dominate, as can also be seen towards the end in the customary misquotation of Lady Thatcher (who was rejecting, with Hayek, the 'constructivism' that personifies 'society' as itself an agent and cannot think of any order that is not a corporate one a *taxis*, in Hayek's terminology). In its amusing to see there, as elsewhere, how Macmurray's 'community', of friendship, and thus of the sphere of what Germans call *Gesellschaft* and the Romans (and Collingwood

and Oakeshott) called *societas* which is constituted by 'contract' (i.e. conscious choice among self-responsible adults), is automatically equated with 'society' as a *taxis* or corporate and non-spontaneous order, and thus with the State, government and officialdom. Has no one in any *Christian* group given any thought to 'empowering' parents, as with vouchers, so that *they*, and not some interfering politician, civil servant or local government officer, can choose where, how, by whom and in what their own children are to be educated, and likewise teachers to choose how, what, whom and where they may teach? By similar schemes (charging full fees and offering scholarships) government could be taken off the backs of universities and colleges.

To return to our text: Harry Judge on Cumberland Lodge 1947-1960, Ronald Preston on the SCM, and W. Salters Sterling on the University Teachers' Project 1966-70, complete Pt II and show just how prominent is the theme of education.

It happens that Cumberland Lodge, though in the Autumn of 1974, was where we came in. For it was there, at the end of a conference convened by Walter James, that a small group of us decided to form a British Polanyi society, though under the name of Convivium. And when Convivium dissolved itself twenty years later, *Appraisal* was launched to continue the work.

Pt III brings up to the present and to assessments of what Oldham and the others achieved and what inspiration and guidance can be obtained from them in the often very different circumstances of today. David Edwards compares Then and Now; Richard Pring looks at recent developments in educational planning (that word again!); John Wyatt at the Higher Education Foundation, still functioning; Duncan Forrester wonders about a free society today; and Keith Chapman asks if a new Moot is needed and gives a positive answer.

This book shows in detail what formal and less formal groups, linked by 'networking' individuals, did and can achieve as leaven in the dough, and ought to inspire us today to attempt something similar, though, I hope, with more awareness of the reality and importance of the unplanned spontaneous order and thus under the inspiration of Polanyi rather than his old friend Mannheim.

R.T. Allen

Reason and Feeling in Hume's Action Theory and Moral Philosophy
Daniel J. Shaw
Edwin Mellon Press, 1998, xxiv + 152 pp.
ISBN 0-7734-8282-2; $79.95 (no Sterling price given).

It is usually automatically assumed that reason in one thing and emotion another, and that the latter is essentially disruptive of the former and therefore to be shunned, except for some who avowedly embrace emotion and therefore 'irrationalism' and 'subjectivism'.

As Dr Shaw states in his Introduction, in Hume are to be found the themes (and assumptions) of contemporary ethics. He, perhaps, is more a clear exemplar rather than the originator of them, or of some at least. And therefore to confront his work, as the author does, is not mere scholarship (if there can be such a thing) but critical engagement with the present and the past. From such an engagement we may receive an overcoming of the dichotomy of reason versus emotion, such as has been adumbrated by Polanyi (among others) in the chapter on 'Intellectual Passions' in *PK*.

The author presents his case very clearly, with a preliminary summary of the whole and by succinctly stating his thesis and aims. He seeks to offer a qualified defence of Hume's anti-rationalism, the qualifications often having a source in other parts of Hume's writings. Hume sought to prove that reason alone cannot motivate action or issue in the making of moral judgments, and that feeling is always essentially involved in both. Shaw dissents from Hume famous conclusion that 'that reason is and ought to be the slave of the passions', and argues for a more equal relation which, he claims, is implied by Hume's own arguments.

His principal argument is set out in the first and longest chapter and I shall concentrate upon it.

Hume argues that reason, the apprehension of ideas and relations among them, whether it be theoretical or practical, cannot influence actions and passions. Shaw admits that the argument is formally invalid: what Hume shows is that neither form of reason *by itself* nor reason *alone*, can engender emotion or action, and that what else is needed is a desire or motivating sentiment. Given Hume's, and nearly every other notion of reason in the modern age, that seems to be true, as Shaw shows with examples of his own interpreted on Humean lines. That is, he does not, and claims that Hume did or would not, deny that reason can influence beliefs, emotions and desires, and thus conduct. In every such case there is presupposed something other than mere reason which is necessary.

Shaw could have invoked such unHumean philosophers as Polanyi and Scheler in support. Polanyi (loc. cit.) showed how emotions are essentially involved in the very initiation, guidance and termination of scientific research and thus of intellectual endeavour in general, the operations of 'reason' itself, while Scheler, especially in his 'Liebe und Erkenntnis' (no English translation), developed the Augustinian tradition to show that knowledge derives from love. One without emotion, as Merleau-Ponty showed with reference to the unfortunate Schneider and, as Scheler did with an equally unfortunate

woman (*The Nature of Sympathy*), would be incapable of action.

With the metaphor of master and slave, Hume overstates his case. He does so because he regards desire as prior in time to reason—you must first desire X before any reasoning about it can have any effect—and therefore as more important. Shaw argues that reasoning, especially about ends and purposes, awakens new desires, so that the actual situation is rather chicken-and-egg, and thus partnership, rather than one-way dependence. A more penetrating criticism of Hume, and of empiricist and analytic thinking generally, would overthrow the assumed separateness of desire and reason.

Shaw is aware of such a possibility. For he continues with Hume's assumption that emotion is a closed internal state or event that involves no representation of the world and so no possibility of truth or error: that is, emotions are not directed upon objects. Hume allows that 'passions' may be founded upon false judgments (that something exists when it doesn't) and false calculations of means to end, but holds that it is the judgment not the passion that is false and unreasonable. The judgment is separate from the emotion and only causally and thus casually linked to it. Shaw presents a defence of this by pointing to phobias, the whole point of which is that the subject is afraid of something which he acknowledges as harmless, and so any emotion can have any sort of object whatsoever. What Shaw ignores is that the victim of a phobia *does* regard its object as dangerous but can never say in what way, unlike Mrs Dale, who when worried about Jim (this is for our older readers), could not at the time say just what it was about him that worried her but was sure that there was something, and was either proved right or ceased to be worried. The irrationality of a phobia consists in its persistence when all reasonable grounds have been excluded. Many emotions have non-specific objects and are either directed to a whole state of affairs (e.g. contentment with the way everything is going, German *Weltschmertz* and Portuguese *saudades*) or with unspecifiable aspects of specific objects ('there's something about him which I don't trust'). Indeed, objects are first tacitly grasped in their emotionally global or holistic character and then., if ever, analysed into their components and aspects (for example, animals and babies first distinguish colours as 'warm' or 'cold', then as brighter' or 'darker', and only finally, if ever, by their colour tone). Real experience operates totally contrary to all empiricist and analytic epistemologies in which discrete parts (logical atoms) are first apprehended and then collected together, of which Hume's philosophy was probably the first explicit statement. 'Reason' is a product of emotion because it is already contained within it.

Shaw is on better, and common sense ground, where he presses Hume's claim that reason cannot oppose emotion, even if the judgments are constituents of it, because emotion has an affective component, against which you cannot argue. Feeling does not always follow the better judgment.

This brings Shaw to Hume's 'three mad preferences', choosing the destruction of the world to lifting one's little finger, choosing one's own utter ruin to avoid the least discomfort to an unknown person, or prefer one's lesser good to a greater. Shaw's defence is that Hume should have allowed that such preferences are irrational, though not in the 'strict' sense of making true judgments (i.e. *about facts in an empiricist or positivist sense*) and choosing means to ends, in another sense which has nothing to do with the understanding but with emotional maturity. Shaw rightly appeals to our experience of those brainy infantile persons (those whom George Orwell called 'the silly clevers') but claims that their positions are logically and intellectually impregnable, and that that is what Hume was really getting it. But here again there is a lack of depth to the criticism, and the perpetuation of the fundamental error of ever separating 'reason' and emotion in the first place, apart from the usual equivocation between 'reason' as some sort of faculty or activity (thinking, calculating, arguing) and 'reason' as the correct outcome or performance of the faculty or activity, which implies that the faculty or activity can never be wrong. Scheler, taking up Augustine's *ordo amoris* and Pascal's *order du coeur* argued for *une logique du coeur* as strict in its way as the logic of understanding. I think that here he was false to his own best insights. All logic (which is forever beyond complete formalisation in any case) is always and inseparably, as are all activities, one of head and heart. There is no emotion which is not a knowing (or misknowing) and no knowing which is not initiated, sustained and corrected (or miscorrected) by feeling (e.g. we always first *feel and must feel* that something is wrong before we can analyse just what it is). Lack of emotion, as Indian asceticism explicitly teaches and seeks, entails total annihilation. Shaw rightly states that intellectual and emotional maturation are interdependent but does not draw the proper consequences from that fact.

Hume had to invoke 'calm' and therefore overlooked passions in order to sustain his thesis that an affective element is always required to motivate action which reason, in the 'strict' sense, is unable to do. Shaw argues, rightly I think, for an 'experiential' account of emotion and desire like Hume's, as opposed to one which must either eventually turn out to be merely behaviourist or denies that there is any *felt* element in desire. Instead, Shaw argues that the shopper for food who does not feel hungry at the time has a disposition which, were he to consider having food when he is hungry, would then prefer that to

not having the food. Here Shaw is right, and so is his example of the person who never has any felt desire about food and therefore would do anything about the empty cupboard. After all, that is what Indian asceticism aims at. Scheler's apathetic woman had to be told what to do or act by habit, habits established when she was capable of feeling. Pure rationalism is wrong, but it is equally wrong in its notion of 'reason', which, at heart, though in a diminished form, Hume shares. Shaw further claims support, with some plausibility, from Hume himself in this revision of 'calm passions'.

He provides a similar account of moral motivation. What is needed is that a person *care* about such matters. (Heidegger in support of Hume!) But, as already indicated, to take the next step, with Augustine and Scheler, and say that love, caring or taking-an-interest-in is prior to all knowing (or rather that knowing is a specification of love) is to go way beyond both Hume and rationalist/cognitivist.

Again, by supporting in general terms Hume's basing the authority of moral laws and values on a natural sympathy, as opposed to a pure cognition of them, he endorses one side of a false dichotomy, and cannot count for the 'categorical' dimension, which however much Kant may have unduly isolated and restricted it (to laws and empty formalisms at that, to the exclusion of values), is the core of the moral in moral experience.

In support of Hume's thesis that simple knowledge of an action can tell you whether it is good or bad, Shaw invokes the psychopath who knows all about the cruelty of an act yet is not averse to it. On Shaw's account, the moral values of objects are their *powers* of giving rise to feelings of approval to standard observers in standard conditions (the common and not partial standpoint), powers that the utilitarian characteristics of objects possess. This, Shaw claims with some justification, fits Hume's text and general philosophy. It avoids simple subjectivism and shows how emotion is required for moral judgment and action.

But, let us note, emotion does not function here as that *through* which we apprehend the value or disvalue of the object, but only as our capacity to be causally affected by the object.

In his brief Conclusion, Shaw commends Hume for giving a place to emotion in ethics, both theoretically and practically, for some of our moral problems are emotional ones and cannot be solved just by reasoning.

Here Shaw has something. For it a great illusion of the age that formal education, information, and telling people can change the world. In contrast to Greek (and Indian ethics), Christian ethics has always known that the real problem is not one of knowledge versus ignorance, and to be remedied by enlightenment, in one form or another, but of doing or not doing what we already know to be right or good, and thus of the 'heart', the order or disorder of emotions and desires. It is curious, and would doubtless have amused Hume himself, to learn that in this respect he was on the side of the angels.

Dr Shaw gives us a good run for our money but, while successfully clarifying Hume, has not succeeded in convincing this reader at least that Hume was any more correct than the 'rationalists' whom he opposed.

R.T. Allen

Continued from p. 145

4 Newbigin

When I look at the work of Lesslie Newbigin, an outstanding Christian thinker of the later part of the century, I find very little reference to Temple. Newbigin as a young man in his Cambridge years, the 1930's, must have heard and met Temple, then reaching the height of his powers as Archbishop of York, and often a university missioner. A quick examination of Newbigin's later books produced one passing and merely incidental reference to Temple—a borrowing of Temple's best-known phrase when he described the ecumenical movement in its early days as 'the great new fact of our time.' In view of more recent history of this movement, and of Newbigin's sharp criticisms of some of its present directions, that prophecy looks rather shaky.

Newbigin builds a good deal on foundations laid by Oldham and by Polanyi. In the late 1930's he read a commissioned paper (which Oldham didn't like!) to the Moot criticising another paper by Middleton Murry, and he may have met Polanyi there. But he regularly quotes from Polanyi and incorporates the latter's epistemology into his own. There is certainly a clear line of basic cultural analysis running from Oldham through Polanyi to Newbigin, and there seems to be no place for Temple in this tradition, despite his ecumenism and his deep social concerns.

All of this provides yet another if somewhat oblique indicator of the special place that Polanyi holds in the twentieth century.

Auckland, New Zealand

Notes:

1. 'Polanyi and Macmurray?', *Appraisal*, Vol. 1, No. 3, March 1997, pp.155-6.
2. 'More on Polanyi and Macmurray', *Appraisal*, Vol. 1, No. 4, October 1997, pp.202-3.